

# Hyun Cheol Koo

## List of Publications by Year in descending order

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121  
papers

3,886  
citations

304368

22  
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123241

61  
g-index

123  
all docs

123  
docs citations

123  
times ranked

5181  
citing authors

#	ARTICLE	IF	CITATIONS
1	New perspectives for Rashba spin-orbit coupling. Nature Materials, 2015, 14, 871-882.	13.3	1,438
2	Control of Spin Precession in a Spin-Injected Field Effect Transistor. Science, 2009, 325, 1515-1518.	6.0	491
3	Current-driven dynamics and inhibition of the skyrmion Hall effect of ferrimagnetic skyrmions in GdFeCo films. Nature Communications, 2018, 9, 959.	5.8	301
4	Spin-orbit torque-driven skyrmion dynamics revealed by time-resolved X-ray microscopy. Nature Communications, 2017, 8, 15573.	5.8	143
5	Controlling the Magnetic Anisotropy of the van der Waals Ferromagnet Fe <sub>3</sub> GeTe <sub>2</sub> through Hole Doping. Nano Letters, 2020, 20, 95-100.	4.5	118
6	Néel-type skyrmions and their current-induced motion in van der Waals ferromagnet-based heterostructures. Physical Review B, 2021, 103, .	1.1	110
7	Deterministic creation and deletion of a single magnetic skyrmion observed by direct time-resolved X-ray microscopy. Nature Electronics, 2018, 1, 288-296.	13.1	108
8	Electrical spin injection and detection in an InAs quantum well. Applied Physics Letters, 2007, 90, 022101.	1.5	82
9	Rashba Effect in Functional Spintronic Devices. Advanced Materials, 2020, 32, e2002117.	11.1	77
10	Single Crystalline $\text{Ag}_2\text{Te}$ Nanowire as a New Topological Insulator. Nano Letters, 2012, 12, 4194-4199.	4.5	75
11	Orbital torque in magnetic bilayers. Nature Communications, 2021, 12, 6710.	5.8	69
12	Electrical detection of coherent spin precession using the ballistic intrinsic spin Hall effect. Nature Nanotechnology, 2015, 10, 666-670.	15.6	67
13	Free-electron creation at the $60^\circ$ twin boundary in Bi <sub>2</sub> Te <sub>3</sub> . Nature Communications, 2016, 7, 12449.	5.8	59
14	Current-controlled bi-stable domain configurations in Ni <sub>81</sub> Fe <sub>19</sub> elements: An approach to magnetic memory devices. Applied Physics Letters, 2002, 81, 862-864.	1.5	51
15	Gate-tunable giant nonreciprocal charge transport in noncentrosymmetric oxide interfaces. Nature Communications, 2019, 10, 4510.	5.8	44
16	Nonlocal Spin Diffusion Driven by Giant Spin Hall Effect at Oxide Heterointerfaces. Nano Letters, 2017, 17, 36-43.	4.5	37
17	Spin-orbit torques associated with ferrimagnetic order in Pt/GdFeCo/MgO layers. Scientific Reports, 2018, 8, 6017.	1.6	36
18	Separation of Rashba and Dresselhaus spin-orbit interactions using crystal direction dependent transport measurements. Applied Physics Letters, 2013, 103, .	1.5	34

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19	Channel width effect on the spin-orbit interaction parameter in a two-dimensional electron gas. Applied Physics Letters, 2007, 90, 112505.	1.5	33
20	Large spin accumulation and crystallographic dependence of spin transport in single crystal gallium nitride nanowires. Nature Communications, 2017, 8, 15722.	5.8	28
21	Ferromagnet-Free All-Electric Spin Hall Transistors. Nano Letters, 2018, 18, 7998-8002.	4.5	27
22	Spin-Based Complementary Logic Device Using Datta's Transistors. IEEE Transactions on Electron Devices, 2015, 62, 3056-3060.	1.6	26
23	Spin-orbit coupling in double-sided doped InAs quantum well structures. Applied Physics Letters, 2010, 97, 012504.	1.5	19
24	Observation of gate-controlled spin-orbit interaction using a ferromagnetic detector. Journal of Applied Physics, 2012, 111, .	1.1	17
25	Influence of annealing on Co/Au multilayers: a structural and magnetic study. Thin Solid Films, 2003, 428, 102-106.	0.8	16
26	Magnetization reversal of ferromagnetic nanoparticles under inhomogeneous magnetic field. Journal of Magnetism and Magnetic Materials, 2007, 309, 272-277.	1.0	16
27	Electronic phase coherence and relaxation in graphene field effect transistor. Solid State Communications, 2010, 150, 1987-1990.	0.9	14
28	Quantum well thickness dependence of Rashba spin-orbit coupling in the InAs/InGaAs heterostructure. Applied Physics Letters, 2011, 98, 202504.	1.5	14
29	Magnetic properties of perpendicularly magnetized Co/Au multilayers. Journal of Magnetism and Magnetic Materials, 2002, 240, 526-528.	1.0	13
30	Shubnikov-de Haas Oscillation and Potentiometric Methods for Spin-Orbit Interaction Parameter Measurement in an InAs Quantum Well. IEEE Transactions on Magnetism, 2014, 50, 18-21.	1.2	13
31	Properties of lithographically formed cobalt and cobalt alloy single crystal patterned media. IEEE Transactions on Magnetism, 2000, 36, 2987-2989.	1.2	12
32	Dependence of the perpendicular anisotropy in Co/Au multilayers on the number of repetitions. Journal of Applied Physics, 2003, 93, 7241-7243.	1.1	12
33	Gate-Controlled Spin-Orbit Interaction in InAs High-Electron Mobility Transistor Layers Epitaxially Transferred onto Si Substrates. ACS Nano, 2013, 7, 9106-9114.	7.3	12
34	Multi-terminal spin valve in a strong Rashba channel exhibiting three resistance states. Scientific Reports, 2018, 8, 3397.	1.6	12
35	Spin-Orbit Torque and Magnetic Damping in Tailored Ferromagnetic Bilayers. Physical Review Applied, 2018, 10, .	1.5	12
36	Observation of Spin-Orbit Interaction Parameter Over a Wide Temperature Range Using Potentiometric Measurement. IEEE Transactions on Magnetism, 2010, 46, 1562-1564.	1.2	10

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37	All-electric spin transistor using perpendicular spins. <i>Journal of Magnetism and Magnetic Materials</i> , 2016, 403, 77-80.	1.0	10
38	Gate modulation of spin precession in a semiconductor channel. <i>Journal Physics D: Applied Physics</i> , 2011, 44, 064006.	1.3	9
39	Gate voltage control of the Rashba effect in a p-type GaSb quantum well and application in a complementary device. <i>Solid-State Electronics</i> , 2013, 82, 34-37.	0.8	9
40	Structural and electrical properties of high-quality 0.41 $\mu$ m-thick InSb films grown on GaAs (100) substrate with In <sub>x</sub> Al <sub>1-x</sub> Sb continuously graded buffer. <i>Materials Research Bulletin</i> , 2012, 47, 2927-2930.	2.7	8
41	Transport of perpendicular spin in a semiconductor channel via a fully electrical method. <i>Applied Physics Letters</i> , 2013, 102, .	1.5	8
42	Spin-polarization-induced anisotropic magnetoresistance in a two-dimensional Rashba system. <i>Current Applied Physics</i> , 2017, 17, 513-516.	1.1	8
43	An InSb-based magnetoresistive biosensor using Fe <sub>3</sub> O <sub>4</sub> nanoparticles. <i>Sensors and Actuators B: Chemical</i> , 2018, 255, 2894-2899.	4.0	8
44	Interface resistance dependence of spin transport in a ferromagnet-semiconductor hybrid structure. <i>Journal of Magnetism and Magnetic Materials</i> , 2008, 320, 1436-1439.	1.0	7
45	Complementary spin transistor using a quantum well channel. <i>Scientific Reports</i> , 2017, 7, 46671.	1.6	7
46	Effects of Interfacial Oxidization on Magnetic Damping and Spin-Orbit Torques. <i>ACS Applied Materials &amp; Interfaces</i> , 2021, 13, 19414-19421.	4.0	7
47	Interface Engineering of Magnetic Anisotropy in van der Waals Ferromagnet-based Heterostructures. <i>ACS Nano</i> , 2021, 15, 16395-16403.	7.3	7
48	Direct observation of spin accumulation and spin-orbit torque driven by Rashba-Edelstein effect in an InAs quantum-well layer. <i>Physical Review B</i> , 2021, 104, .	1.1	7
49	Field-like spin-orbit torque induced by bulk Rashba channels in GeTe/NiFe bilayers. <i>NPG Asia Materials</i> , 2021, 13, .	3.8	7
50	Effect of ferromagnetic nanoparticles on the transport properties of a GaMnAs microbridge. <i>Applied Physics Letters</i> , 2007, 91, 062513.	1.5	6
51	Injection, detection and gate voltage control of spins in the spin field effect transistor. <i>Journal of Applied Physics</i> , 2011, 109, 102405.	1.1	6
52	Investigation of the magnetic interaction of small Permalloy particles. <i>IEEE Transactions on Magnetics</i> , 2001, 37, 2049-2051.	1.2	5
53	Temperature dependence of spin injection efficiency in an epitaxially grown Fe/GaAs hybrid structure. <i>Journal of Magnetism and Magnetic Materials</i> , 2009, 321, 3795-3798.	1.0	5
54	Effect of the buffer layer on the magnetic properties in CoFe/Pd multilayers. <i>Journal of the Korean Physical Society</i> , 2012, 61, 1500-1504.	0.3	5

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55	Ballistic Spin Hall Transistor Using a Heterostructure Channel and Its Application to Logic Devices. Journal of Electronic Materials, 2017, 46, 3894-3898.	1.0	5
56	Effect of the spin-orbit interaction at insulator/ferromagnet interfaces on spin-orbit torques. Physical Review B, 2021, 103, .	1.1	5
57	A spin field effect transistor using stray magnetic fields. Solid-State Electronics, 2009, 53, 1016-1019.	0.8	4
58	A Case of Intrapancreatic Accessory Spleen Mistaken as a Pancreatic Mass due to Different Enhancing Pattern from Normal Spleen. Korean journal of gastroenterology = Taehan Sohwagi Hakhoe chi, The, 2011, 58, 357.	0.2	4
59	New optical transition, structural, and ferromagnetic properties of InCrP:Zn implanted with Cr. Journal of Luminescence, 2014, 154, 593-596.	1.5	4
60	Spin accumulation at in-situ grown Fe/GaAs(100) Schottky barriers measured using the three- and four-terminal methods. Applied Physics Letters, 2016, 109, 122409.	1.5	4
61	Effect of Rashba interaction at normal metal/insulator interface on spin-orbit torque of ferromagnet/normal metal/insulator trilayers. Current Applied Physics, 2019, 19, 1362-1366.	1.1	4
62	Theory of spin-torque ferrimagnetic resonance. Physical Review B, 2021, 104, .	1.1	4
63	Demonstration of in-plane magnetized stochastic magnetic tunnel junction for binary stochastic neuron. AIP Advances, 2022, 12, .	0.6	4
64	High mobility in a two dimensional electron system with a thinned barrier. Solid State Communications, 2011, 151, 1599-1601.	0.9	3
65	Spin injection and detection in In <sub>0.53</sub> Ga <sub>0.47</sub> As nanomembrane channels transferred onto Si substrates. Applied Physics Express, 2014, 7, 093004.	1.1	3
66	Gate-Controlled Spin-Orbit Coupling in InAs/InGaAs Quantum Well Structures. Journal of Nanoscience and Nanotechnology, 2014, 14, 5212-5215.	0.9	3
67	Electrical spin injection in modulation-doped GaAs from an in situ grown Fe/MgO layer. Applied Physics Letters, 2015, 107, 102407.	1.5	3
68	Conductance Change Induced by the Rashba Effect in the LaAlO <sub>3</sub> /SrTiO <sub>3</sub> Interface. Journal of Nanoscience and Nanotechnology, 2015, 15, 8632-8636.	0.9	3
69	Formation and magnetic properties of InFeP:Ag nanorods fabricated with noble metal Ag using an ion milling method. Nanotechnology, 2017, 28, 505702.	1.3	3
70	Influence of the Magnetic Field on the Effective Mass and the Rashba effect in an In <sub>0.53</sub> Ga <sub>0.47</sub> As Quantum-well Structure. Journal of the Korean Physical Society, 2010, 57, 1929-1932.	0.3	3
71	A New Reference Signal Generation Method for MRAM Using a 90-Degree Rotated MTJ. IEEE Transactions on Magnetics, 2004, 40, 2628-2630.	1.2	2
72	Inhomogeneous spin accumulation in Py/Au/Py spin valve. Physica Status Solidi (B): Basic Research, 2007, 244, 4530-4533.	0.7	2

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73	Electric Field Effect on Spin Diffusion in a Semiconductor Channel. IEEE Transactions on Magnetics, 2008, 44, 2647-2650.	1.2	2
74	Determination of Spin-Orbit Interaction in InAs Heterostructure. IEEE Transactions on Magnetics, 2009, 45, 2383-2385.	1.2	2
75	Detection of Rashba field using a rotational applied field. Journal of Applied Physics, 2011, 109, 07C313.	1.1	2
76	Rashba effect induced magnetoresistance in an InAs heterostructure. Thin Solid Films, 2011, 519, 8203-8206.	0.8	2
77	Crystalline anisotropy effect on magnetic properties and its competition with shape anisotropy. Metals and Materials International, 2011, 17, 509-513.	1.8	2
78	Large spatial distribution of spin accumulation in wide Au channel. Solid-State Electronics, 2013, 89, 72-75.	0.8	2
79	Determination of g-factor in a quantum well channel with a strong Rashba effect. Journal of Applied Physics, 2014, 115, 17C702.	1.1	2
80	Enhanced ferromagnetism by preventing antiferromagnetic MnO <sub>2</sub> in InP:Be/Mn/InP:Be triple layers fabricated using molecular beam epitaxy. Current Applied Physics, 2014, 14, 558-562.	1.1	2
81	Exchange-biased ferromagnetic electrodes and their application to complementary spin transistors. Current Applied Physics, 2015, 15, S32-S35.	1.1	2
82	Fermi surface distortion induced by interaction between Rashba and Zeeman effects. Journal of Applied Physics, 2015, 117, 17C111.	1.1	2
83	GaSb/InGaAs 2-dimensional hole gas grown on InP substrate for III-V CMOS applications. Current Applied Physics, 2017, 17, 1005-1008.	1.1	2
84	Electrical spin transport in cylindrical silicon nanowires with CoFeB/MgO contacts. Applied Physics Letters, 2017, 111, 062402.	1.5	2
85	Reconfigurable spin logic device using electrochemical potentials. Applied Physics Letters, 2019, 114, 152403.	1.5	2
86	Surface morphology evolution and underlying defects in homoepitaxial growth of GaAs (110). Journal of Alloys and Compounds, 2021, 874, 159848.	2.8	2
87	Spin Hall Effect Induced by a Pd/CoFe Multilayer in a Semiconductor Channel. Journal of the Korean Physical Society, 2008, 53, 1357-1362.	0.3	2
88	Investigation of magnetic properties of Pt/CoFeB/MgO layers using angle-resolved spin-torque ferromagnetic resonance spectroscopy. Journal of Applied Physics, 2022, 131, .	1.1	2
89	Spin transport in an InAs based two-dimensional electron gas nanochannel. Journal of Applied Physics, 2005, 97, 10D502.	1.1	1
90	Unbalanced spin accumulation induced by spin Hall effect. Journal of Magnetism and Magnetic Materials, 2007, 310, e705-e707.	1.0	1

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91	Spin-filtering effect in a two-dimensional electron gas under a local fringe field. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2007, 204, 3958-3961.	0.8	1
92	Bistable Voltage Transition Using Spin-Orbit Interaction in a Ferromagnet-Semiconductor Hybrid Structure. <i>IEEE Transactions on Magnetics</i> , 2008, 44, 419-422.	1.2	1
93	Spin Interaction Effect on Potentiometric Measurements in a Quantum Well Channel. <i>IEEE Transactions on Magnetics</i> , 2009, 45, 2389-2392.	1.2	1
94	Nonlocal voltage in a spin field effect transistor with finite channel width. <i>Current Applied Physics</i> , 2011, 11, 276-279.	1.1	1
95	Electric-Field-Induced Spin Injection Enhancement. <i>Journal of Nanoscience and Nanotechnology</i> , 2014, 14, 7911-7914.	0.9	1
96	Spin injection in indium arsenide. <i>Frontiers in Physics</i> , 2015, 3, .	1.0	1
97	Magnetic property ( $T \approx 300\text{K}$ ) originated from InZnP:Ag nano-rods fabricated with noble metal Ag using ion milling method. <i>Journal of Alloys and Compounds</i> , 2017, 704, 552-556.	2.8	1
98	Observation of spin dependent electrochemical potentials at room temperature in a quantum well structure. <i>Current Applied Physics</i> , 2017, 17, 1455-1458.	1.1	1
99	A possible superconductor-like state at elevated temperatures near metal electrodes in an LaAlO <sub>3</sub> /SrTiO <sub>3</sub> interface. <i>Scientific Reports</i> , 2018, 8, 11558.	1.6	1
100	Anisotropic magnetoresistance in a Ni <sub>81</sub> Fe <sub>19</sub> /SiO <sub>2</sub> /Ca-Bi <sub>2</sub> Se <sub>3</sub> hybrid structure. <i>Thin Solid Films</i> , 2019, 676, 87-91.	0.8	1
101	Electrical spin transport in a GaAs (110) channel. <i>Current Applied Physics</i> , 2020, 20, 1295-1298.	1.1	1
102	Magnetoresistance of a ferromagnet/semiconductor interface with a strong Rashba effect. <i>Thin Solid Films</i> , 2020, 706, 138047.	0.8	1
103	Spin-orbit torques induced by spin Hall and spin swapping currents of a separate ferromagnet in a magnetic trilayer. <i>Current Applied Physics</i> , 2021, 29, 54-58.	1.1	1
104	Manipulation of the Rashba Spin-orbit Interaction in Double-sided doped In <sub>0.53</sub> Ga <sub>0.47</sub> As/InAs Quantum-well Structures. <i>Journal of the Korean Physical Society</i> , 2010, 57, 1946-1949.	0.3	1
105	Transport property of insulating barrier in a ferromagnet-semiconductor hybrid system. <i>Solid-State Electronics</i> , 2006, 50, 1682-1686.	0.8	0
106	Spin hall effect in an inverted heterostructure. , 2006, , .		0
107	Resistance modulation using amperian field in a two-dimensional electron gas system. <i>Journal of Magnetism and Magnetic Materials</i> , 2007, 310, 1952-1954.	1.0	0
108	Observation of room temperature magnetoresistance in a lateral ferromagnet-semiconductor structure. <i>Physica Status Solidi (B): Basic Research</i> , 2007, 244, 4448-4451.	0.7	0

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109	Interaction Between Rashba and Zeeman Effects in a Quantum Well Channel. Journal of Nanoscience and Nanotechnology, 2014, 14, 3581-3583.	0.9	0
110	Electrical Detection of the Spin Hall Effects in InAs Quantum Well Structure with Perpendicular Magnetization of [Pd/CoFe] Multilayer. IEEE Transactions on Magnetism, 2014, 50, 1-4.	1.2	0
111	Crystalline Direction Dependence of Spin Precession Angle and Its Application to Complementary Spin Logic Devices. Journal of Nanoscience and Nanotechnology, 2015, 15, 7518-7521.	0.9	0
112	Spin-Orbit Coupling Induced Coercivity Change at a Ferromagnet-Semiconductor Interface. Journal of Nanoscience and Nanotechnology, 2016, 16, 10210-10213.	0.9	0
113	Electrical Observation of the Effective Mass in a Single-Crystal WTe <sub>2</sub> Layer. Journal of the Korean Physical Society, 2019, 74, 154-158.	0.3	0
114	Large Magnetoconductance in GaAs Induced by Impact Ionization. Journal of the Korean Physical Society, 2019, 75, 1017-1020.	0.3	0
115	Spin transport at a Pt/InAs quantum well interface using spin Hall and Rashba effects. Applied Physics Letters, 2020, 117, 042403.	1.5	0
116	Spin Precession and Spin-Charge Conversion in a Strong Rashba Channel at Room Temperature. Electronic Materials Letters, 2021, 17, 324-330.	1.0	0
117	A highly controllable doping technique via interdiffusion between epitaxial germanium layers and GaAs. Surfaces and Interfaces, 2021, 26, 101390.	1.5	0
118	Influence of Growth Temperature on the Magnetic Anisotropy of Co Grown on GaAs (001) Substrates. Journal of the Korean Physical Society, 2008, 53, 3352-3355.	0.3	0
119	Spin Transport in a Submicron-sized Structure Using Vanadium Metal Masks. Journal of the Korean Physical Society, 2009, 55, 207-211.	0.3	0
120	Detection and Control of the Effective Magnetic Field in a Ca-Doped Bi <sub>2</sub> Se <sub>3</sub> Topological Insulator. Advanced Electronic Materials, 0, , 2101075.	2.6	0
121	Room-Temperature Nonreciprocal Charge Transport in an InAs-Based Rashba Channel. ECS Journal of Solid State Science and Technology, 2022, 11, 045011.	0.9	0