

# Kaiyou Wang

## List of Publications by Year in descending order

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h-index

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73  
g-index

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99  
docs citations

99  
times ranked

5262  
citing authors

| #  | ARTICLE  | IF   | CITATIONS |
|----|--|------|-----------|
| 1  | Mn Interstitial Diffusion in(Ga,Mn)As. Physical Review Letters, 2004, 92, 037201.  | 2.9  | 476       |
| 2  | Electric field control of deterministic current-induced magnetization switching in a hybrid ferromagnetic/ferroelectric structure. Nature Materials, 2017, 16, 712-716.                                | 13.3 | 401       |
| 3  | Prospects for high temperature ferromagnetism in (Ga,Mn)As semiconductors. Physical Review B, 2005, 72, .  | 1.1  | 382       |
| 4  | High-Curie-temperature Ga <sub>1-x</sub> Mn <sub>x</sub> As obtained by resistance-monitored annealing. Applied Physics Letters, 2002, 81, 4991-4993.  | 1.5  | 318       |
| 5  | High-Performance, Self-Driven Photodetector Based on Graphene Sandwiched GaSe/WS <sub>2</sub> /GaSe Heterojunction. Advanced Optical Materials, 2018, 6, 1700490.                                      | 3.6  | 189       |
| 6  | Fast, multicolor photodetection with graphene-contacted GaSe/InSe van der Waals heterostructures. Nanotechnology, 2017, 28, 27LT01.  | 1.3  | 180       |
| 7  | Gate Tuning of High-Performance InSe-Based Photodetectors Using Graphene Electrodes. Advanced Optical Materials, 2015, 3, 1418-1423.   | 3.6  | 170       |
| 8  | Wafer-scale two-dimensional ferromagnetic Fe <sub>3</sub> GeTe <sub>2</sub> thin films grown by molecular beam epitaxy. Npj 2D Materials and Applications, 2017, 1, .                                  | 3.9  | 157       |
| 9  | Tuning a Binary Ferromagnet into a Multistate Synapse with Spin-Orbit-Torque-Induced Plasticity. Advanced Functional Materials, 2019, 29, 1808104.   | 7.8  | 139       |
| 10 | Hall effect and hole densities in Ga <sub>1-x</sub> Mn <sub>x</sub> As. Applied Physics Letters, 2002, 81, 3010-3012.  | 1.5  | 125       |
| 11 | Deterministic Magnetization Switching Using Lateral Spin-Orbit Torque. Advanced Materials, 2020, 32, e1907929.   | 11.1 | 123       |
| 12 | Toward High-Performance Photodetectors Based on 2D Materials: Strategy on Methods. Small Methods, 2018, 2, 1700349.  | 4.6  | 118       |
| 13 | High-detectivity ultraviolet photodetectors based on laterally mesoporous GaN. Nanoscale, 2017, 9, 8142-8148.  | 2.8  | 113       |
| 14 | Fast gate-tunable photodetection in the graphene sandwiched WSe <sub>2</sub> /GaSe heterojunctions. Nanoscale, 2017, 9, 8388-8392.   | 2.8  | 112       |
| 15 | Spin-Valve Effect in Fe <sub>3</sub> GeTe <sub>2</sub> /MoS <sub>2</sub> /Fe <sub>3</sub> GeTe <sub>2</sub> van der Waals Heterostructures. ACS Applied Materials & Interfaces, 2020, 12, 43921-43926. | 4.0  | 109       |
| 16 | Strong enhancement of photoresponsivity with shrinking the electrodes spacing in few layer GaSe photodetectors. Scientific Reports, 2015, 5, 8130.   | 1.6  | 106       |
| 17 | Adjustable Current-Induced Magnetization Switching Utilizing Interlayer Exchange Coupling. Advanced Electronic Materials, 2018, 4, 1800224.  | 2.6  | 105       |
| 18 | Dc-transport properties of ferromagnetic (Ga,Mn)As semiconductors. Applied Physics Letters, 2003, 83, 320-322.   | 1.5  | 98        |

| #  | ARTICLE  | IF   | CITATIONS |
|----|--|------|-----------|
| 19 | Anisotropic magnetoresistance and magnetic anisotropy in high-quality (Ga,Mn)As films. Physical Review B, 2005, 72, .  | 1.1  | 93        |
| 20 | Charge trap memory based on few-layer black phosphorus. Nanoscale, 2016, 8, 2686-2692.   | 2.8  | 93        |
| 21 | Spin-orbit torque in Pt/CoNiCo/Pt symmetric devices. Scientific Reports, 2016, 6, 20778.   | 1.6  | 92        |
| 22 | Spin Logic Devices via Electric Field Controlled Magnetization Reversal by Spin-Orbit Torque. IEEE Electron Device Letters, 2019, 40, 1554-1557.                                   | 2.2  | 69        |
| 23 | From two- to multi-state vertical spin valves without spacer layer based on Fe <sub>3</sub> GeTe <sub>2</sub> van der Waals homo-junctions. Science Bulletin, 2020, 65, 1072-1077. | 4.3  | 67        |
| 24 | Influence of the Mn interstitial on the magnetic and transport properties of (Ga,Mn)As. Journal of Applied Physics, 2004, 95, 6512-6514.   | 1.1  | 66        |
| 25 | Prospect of Spin-Orbitronic Devices and Their Applications. Science, 2020, 23, 101614.   | 1.9  | 66        |
| 26 | Enhanced Photoresponse in MoTe <sub>2</sub> Photodetectors with Asymmetric Graphene Contacts. Advanced Optical Materials, 2019, 7, 1900190.  | 3.6  | 65        |
| 27 | Interlayer Band-to-Band Tunneling and Negative Differential Resistance in van der Waals BP/InSe Field-Effect Transistors. Advanced Functional Materials, 2020, 30, 1910713.        | 7.8  | 65        |
| 28 | Large Tunneling Magnetoresistance in van der Waals Ferromagnet/Semiconductor Heterojunctions. Advanced Materials, 2021, 33, e2104658.  | 11.1 | 61        |
| 29 | Magnetism in (Ga,Mn)As Thin Films With TC Up To 173K. AIP Conference Proceedings, 2005, , .  | 0.3  | 60        |
| 30 | Versatile Crystal Structures and (Opto)electronic Applications of the 2D Metal Mono-, Di-, and Tri-Chalcogenide Nanosheets. Advanced Functional Materials, 2019, 29, 1900040.      | 7.8  | 58        |
| 31 | Tuning Interfacial Spins in Antiferromagnetic-Ferromagnetic-Heavy-Metal Heterostructures via Spin-Orbit Torque. Physical Review Applied, 2020, 13, .                               | 1.5  | 57        |
| 32 | Direct Polarimetric Image Sensor and Wide Spectral Response Based on Quasi-1D Sb <sub>2</sub> S <sub>3</sub> Nanowire. Advanced Functional Materials, 2021, 31, 2006601.           | 7.8  | 52        |
| 33 | Manipulation of Magnetization by Spin-Orbit Torque. Advanced Quantum Technologies, 2019, 2, 1800052.   | 1.8  | 50        |
| 34 | Low-temperature magnetization of (Ga,Mn)As semiconductors. Physical Review B, 2006, 73, .  | 1.1  | 48        |
| 35 | Broadband polarized photodetector based on p-BP/n-ReS <sub>2</sub> heterojunction. Journal of Semiconductors, 2019, 40, 092001.  | 2.0  | 46        |
| 36 | Control of coercivities in (Ga,Mn)As thin films by small concentrations of MnAs nanoclusters. Applied Physics Letters, 2006, 88, 022510.   | 1.5  | 41        |

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|----|--|------|-----------|
| 37 | Rational Design of Ultralarge Pb <sub>1-x</sub> Sn <sub>x</sub> Te Nanoplates for Exploring Crystalline Symmetry-Protected Topological Transport. <i>Advanced Materials</i> , 2016, 28, 617-623. | 11.1 | 38        |
| 38 | (Ga,Mn)As grown on (311) GaAs substrates: Modified Mn incorporation and magnetic anisotropies. <i>Physical Review B</i> , 2005, 72, .  | 1.1  | 37        |
| 39 | Intrinsic and extrinsic contributions to the lattice parameter of GaMnAs. <i>Applied Physics Letters</i> , 2005, 86, 071902.   | 1.5  | 37        |
| 40 | p-type conductivity in cubic (Ga,Mn)N thin films. <i>Applied Physics Letters</i> , 2005, 86, 152114.   | 1.5  | 34        |
| 41 | Room-Temperature Nanoseconds Spin Relaxation in WTe <sub>2</sub> and MoTe <sub>2</sub> Thin Films. <i>Advanced Science</i> , 2018, 5, 1700912.   | 5.6  | 34        |
| 42 | Pressure-Induced Metallization and Robust Superconductivity in Pristine 1T- <i>SnSe</i> . <i>Advanced Electronic Materials</i> , 2018, 4, 1800155.   | 2.6  | 33        |
| 43 | Anisotropic current-controlled magnetization reversal in the ferromagnetic semiconductor (Ga,Mn)As. <i>Applied Physics Letters</i> , 2013, 103, 022401.  | 1.5  | 32        |
| 44 | High-Efficiency Spin-Orbit Torque Switching Using a Single Heavy-Metal Alloy with Opposite Spin Hall Angles. <i>Advanced Electronic Materials</i> , 2021, 7, .                                   | 2.6  | 32        |
| 45 | Field-Free Manipulation of Skyrmion Creation and Annihilation by Tunable Strain Engineering. <i>Advanced Functional Materials</i> , 2021, 31, 2008715.   | 7.8  | 31        |
| 46 | Hybrid light emitting diodes based on stable, high brightness all-inorganic CsPbI <sub>3</sub> perovskite nanocrystals and InGaN. <i>Nanoscale</i> , 2019, 11, 13450-13457.                      | 2.8  | 29        |
| 47 | Domain imaging and domain wall propagation in (Ga, Mn)As thin films with tensile strain. <i>Journal of Applied Physics</i> , 2007, 101, 106101.  | 1.1  | 27        |
| 48 | Magnetic Skyrmions in a Hall Balance with Interfacial Canted Magnetizations. <i>Advanced Materials</i> , 2020, 32, e1907452.   | 11.1 | 26        |
| 49 | Current-driven domain wall motion across a wide temperature range in a (Ga,Mn)(As,P) device. <i>Applied Physics Letters</i> , 2010, 97, .  | 1.5  | 25        |
| 50 | Current-induced four-state magnetization switching by spin-orbit torques in perpendicular ferromagnetic trilayers. <i>Applied Physics Letters</i> , 2018, 113, .                                 | 1.5  | 25        |
| 51 | High Responsivity and Wavelength Selectivity of GaN-Based Resonant Cavity Photodiodes. <i>Advanced Optical Materials</i> , 2020, 8, 1901276.   | 3.6  | 24        |
| 52 | Non-layered ZnSb nanoplates for room temperature infrared polarized photodetectors. <i>Journal of Materials Chemistry C</i> , 2020, 8, 6388-6395.  | 2.7  | 24        |
| 53 | Manipulating antiferromagnetic interfacial states by spin-orbit torques. <i>Physical Review B</i> , 2021, 104, .   | 1.1  | 23        |
| 54 | Determination of the Mn concentration in GaMnAs. <i>Semiconductor Science and Technology</i> , 2005, 20, 369-373.  | 1.0  | 22        |

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|----|---|-----|-----------|
| 55 | Complementary Lateral Spin-Orbit Building Blocks for Programmable Logic and In-Memory Computing. <i>Advanced Electronic Materials</i> , 2020, 6, 2000296.   | 2.6 | 18        |
| 56 | A nanopillar-modified high-sensitivity asymmetric graphene-GaN photodetector. <i>Nanoscale</i> , 2021, 13, 17512-17520.   | 2.8 | 18        |
| 57 | Gradient Descent on Multilevel Spin-Orbit Synapses with Tunable Variations. <i>Advanced Intelligent Systems</i> , 2021, 3, 2000182.   | 3.3 | 18        |
| 58 | Progress of GaN-Based Optoelectronic Devices Integrated with Optical Resonances. <i>Small</i> , 2022, 18, e2106757.   | 5.2 | 18        |
| 59 | Voltage manipulation of the magnetization reversal in Fe/n-GaAs/piezoelectric heterostructure. <i>Journal of Magnetism and Magnetic Materials</i> , 2015, 375, 148-152.   | 1.0 | 17        |
| 60 | Controlling vertical magnetization shift by spin-orbit torque in ferromagnetic/antiferromagnetic/ferromagnetic heterostructure. <i>Applied Physics Letters</i> , 2020, 116, .   | 1.5 | 17        |
| 61 | Polarization-sensitive and wide-spectrum photovoltaic detector based on quasi-1D ZrGeTe <sub>4</sub> nanoribbon. <i>Information Materials</i> , 2022, 4, .  | 8.5 | 17        |
| 62 | Ferroelectric semiconductor junctions based on graphene/In <sub>2</sub> Se <sub>3</sub> /graphene van der Waals heterostructures. <i>2D Materials</i> , 2021, 8, 045020.  | 2.0 | 16        |
| 63 | Vertical WS <sub>2</sub> spin valve with Ohmic property based on Fe <sub>3</sub> GeTe <sub>2</sub> electrodes*. <i>Chinese Physics B</i> , 2021, 30, 097505.  | 0.7 | 16        |
| 64 | Tuning the High-Efficiency Field-Free Current-Induced Deterministic Switching via Ultrathin PtMo Layer with Mo Content. <i>Advanced Electronic Materials</i> , 2021, 7, 2100528.  | 2.6 | 15        |
| 65 | Deterministic magnetic switching of perpendicular magnets by gradient current density. <i>Journal of Magnetism and Magnetic Materials</i> , 2019, 489, 165474.  | 1.0 | 14        |
| 66 | Current-assisted magnetization reversal in Fe <sub>3</sub> GeTe <sub>2</sub> van der Waals homojunctions. <i>Nanoscale</i> , 2022, 14, 2352-2358.   | 2.8 | 13        |
| 67 | Atomic origin of spin-valve magnetoresistance at the SrRuO <sub>3</sub> grain boundary. <i>National Science Review</i> , 2020, 7, 755-762.  | 4.6 | 12        |
| 68 | Spin Logical and Memory Device Based on the Nonvolatile Ferroelectric Control of the Perpendicular Magnetic Anisotropy in PbZr <sub>0.2</sub> Ti <sub>0.8</sub> O <sub>3</sub> /Co/Pt Heterostructure. <i>Advanced Electronic Materials</i> , 2020, 6, 2000102. | 2.6 | 12        |
| 69 | Oscillation of current-induced interfacial spins reorientation in a like-synthetic antiferromagnet/antiferromagnet system. <i>Science China: Physics, Mechanics and Astronomy</i> , 2021, 64, 1.  | 2.0 | 12        |
| 70 | Room-Temperature van der Waals Perpendicular Ferromagnet Through Interlayer Magnetic Coupling. <i>Physical Review Applied</i> , 2022, 17, .   | 1.5 | 12        |
| 71 | Magnetic reversal under external field and current-driven domain wall motion in (Ga,Mn)As: influence of extrinsic pinning. <i>New Journal of Physics</i> , 2008, 10, 085007.  | 1.2 | 10        |
| 72 | Sensitivity enhancement of graphene Hall sensors modified by single-molecule magnets at room temperature. <i>RSC Advances</i> , 2017, 7, 1776-1781.   | 1.7 | 10        |

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|----|--|------|-----------|
| 73 | All-Electrical Multifunctional Spin Logics by Adjusting the Spin Current Density Gradient in a Single Device. ACS Applied Electronic Materials, 2021, 3, 2646-2651.  | 2.0  | 10        |
| 74 | Memristive effects due to charge transfer in graphene gated through ferroelectric $\text{CuInP}_2\text{S}_6$ . 2D Materials, 2022, 9, 035003.                        | 2.0  | 10        |
| 75 | Complementary logic with a spin. Nature Electronics, 2018, 1, 378-379.   | 13.1 | 9         |
| 76 | Current-induced out-of-plane effective magnetic field in antiferromagnet/heavy metal/ferromagnet/heavy metal multilayer. Applied Physics Letters, 2020, 117, 092404. | 1.5  | 9         |
| 77 | Perspectives on photodetectors based on selenides and their van der Waals heterojunctions. Applied Physics Letters, 2021, 118, 190501.                               | 1.5  | 9         |
| 78 | Secondary magnetic phases in (Ga,Mn)As determined by x-ray magnetic circular dichroism. Journal of Applied Physics, 2007, 102, 023902.                               | 1.1  | 8         |
| 79 | Estimating spin Hall angle in heavy metal/ferromagnet heterostructures. Journal of Magnetism and Magnetic Materials, 2020, 496, 165920.                              | 1.0  | 8         |
| 80 | Anomalous Hall effect in graphene coupled to a layered magnetic semiconductor. Physical Review B, 2021, 103, .   | 1.1  | 8         |
| 81 | EdmondsetÅal.Reply.. Physical Review Letters, 2005, 94, .  | 2.9  | 7         |
| 82 | Magnetic domain structure and magnetization reversal in (311)B Ga <sub>0.91</sub> Mn <sub>0.09</sub> As films. Journal of Applied Physics, 2006, 99, 093908.         | 1.1  | 7         |
| 83 | Spin and orbital splitting in ferromagnetic contacted single wall carbon nanotube devices. Applied Physics Letters, 2013, 102, 093508.                               | 1.5  | 7         |
| 84 | All-Linear Multistate Magnetic Switching Induced by Electrical Current. Physical Review Applied, 2021, 15, .   | 1.5  | 7         |
| 85 | High performance conical nanostructured GaN-based photodetectors. Journal Physics D: Applied Physics, 2022, 55, 035102.  | 1.3  | 7         |
| 86 | Memristor with BiVO <sub>4</sub> nanoparticle as artificial synapse for neuroinspired computing. Applied Physics Letters, 2022, 120, .                               | 1.5  | 7         |
| 87 | RF magnetron sputtering induced the perpendicular magnetic anisotropy modification in Pt/Co based multilayers*. Chinese Physics B, 2021, 30, 028506.                 | 0.7  | 5         |
| 88 | Spin logic operations based on magnetization switching by asymmetric spin current. Science China Information Sciences, 2022, 65, 1.                                  | 2.7  | 5         |
| 89 | Polarized x-ray spectroscopy of quaternary ferromagnetic semiconductor (Ga,Mn)(As,P) thin films. Applied Physics Letters, 2011, 99, 022502.                          | 1.5  | 4         |
| 90 | Search For Hole Mediated Ferromagnetism In Cubic (Ga,Mn)N. AIP Conference Proceedings, 2005, , .   | 0.3  | 3         |

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|----|---|------|-----------|
| 91 | Spintronic Synapses: Tuning a Binary Ferromagnet into a Multistate Synapse with Spin-Orbit-Torque-Induced Plasticity (Adv. Funct. Mater. 25/2019). Advanced Functional Materials, 2019, 29, 1970175.                            | 7.8  | 3         |
| 92 | A scanning tunneling microscope capable of imaging specified micron-scale small samples. Review of Scientific Instruments, 2012, 83, 123701.  | 0.6  | 2         |
| 93 | Magnetic coupling in ferromagnetic semiconductor GaMnAs/AlGaMnAs bilayer devices. Science China: Physics, Mechanics and Astronomy, 2014, 57, 1471-1475.   | 2.0  | 2         |
| 94 | Piezostain modulation of magnetic damping in MBE-grown epitaxial Co <sub>2</sub> FeAl/GaAs heterostructure. Journal Physics D: Applied Physics, 2019, 52, 455001.   | 1.3  | 2         |
| 95 | Metal Chalcogenides: Versatile Crystal Structures and (Opto)electronic Applications of the 2D Metal Mono-, Di-, and Tri-Chalcogenide Nanosheets (Adv. Funct. Mater. 24/2019). Advanced Functional Materials, 2019, 29, 1970161. | 7.8  | 2         |
| 96 | A domain wall device with electrical control. Nature Electronics, 2021, 4, 378-379.   | 13.1 | 2         |
| 97 | All-Electrical Programmable Domain-Wall Spin Logic-In-Memory Device. Advanced Electronic Materials, 2022, 8, .  | 2.6  | 2         |
| 98 | Superconductivity: Pressure-Induced Metallization and Robust Superconductivity in Pristine 1T -SnSe <sub>2</sub> (Adv. Electron. Mater. 8/2018). Advanced Electronic Materials, 2018, 4, 1870040.                               | 2.6  | 0         |