Guangyu Zhang

List of Publications by Year
in descending order

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129 papers	11,162 citations	44069 48 h-index	30087 103 g-index
135 all docs	135 docs citations	135 times ranked	13958 citing authors

#	Article	IF	Citations
1	Superconductors, orbital magnets and correlated states in magic-angle bilayer graphene. Nature, 2019, 574, 653-657.	27.8	987
2	Epitaxial growth of single-domain graphene on hexagonal boron nitride. Nature Materials, 2013, 12, 792-797.	27.5	882
3	Covalently bonded single-molecule junctions with stable and reversible photoswitched conductivity. Science, 2016, 352, 1443-1445.	12.6	697
4	Wafer-Scale Growth and Transfer of Highly-Oriented Monolayer MoS₂ Continuous Films. ACS Nano, 2017, 11, 12001-12007.	14.6	397
5	General synthesis of two-dimensional van der Waals heterostructure arrays. Nature, 2020, 579, 368-374.	27.8	393
6	Correlated states in twisted double bilayer graphene. Nature Physics, 2020, 16, 520-525.	16.7	374
7	Argon Plasma Induced Phase Transition in Monolayer MoS₂. Journal of the American Chemical Society, 2017, 139, 10216-10219.	13.7	332
8	Ultrafast formation of interlayer hot excitons in atomically thin MoS2/WS2 heterostructures. Nature Communications, 2016, 7, 12512.	12.8	313
9	Oxygen-Assisted Chemical Vapor Deposition Growth of Large Single-Crystal and High-Quality Monolayer MoS₂. Journal of the American Chemical Society, 2015, 137, 15632-15635.	13.7	301
10	Ultra-sensitive strain sensors based on piezoresistive nanographene films. Applied Physics Letters, 2012, 101, 063112.	3.3	270
11	Scalable Growth of High-Quality Polycrystalline MoS₂ Monolayers on SiO₂ with Tunable Grain Sizes. ACS Nano, 2014, 8, 6024-6030.	14.6	263
12	Boundary activated hydrogen evolution reaction on monolayer MoS2. Nature Communications, 2019, 10, 1348.	12.8	263
13	Large-scale flexible and transparent electronics based on monolayer molybdenum disulfide field-effect transistors. Nature Electronics, 2020, 3, 711-717.	26.0	255
14	Current-driven magnetization switching in a van der Waals ferromagnet Fe ₃ GeTe ₂. Science Advances, 2019, 5, eaaw8904.	10.3	239
15	Observation of Strong Interlayer Coupling in MoS₂/WS₂ Heterostructures. Advanced Materials, 2016, 28, 1950-1956.	21.0	225
16	Catalyst-free growth of nanographene films on various substrates. Nano Research, 2011, 4, 315-321.	10.4	220
17	Grapheneâ€Contacted Ultrashort Channel Monolayer MoS₂ Transistors. Advanced Materials, 2017, 29, 1702522.	21.0	218
18	Gaps induced by inversion symmetry breaking andÂsecond-generation Dirac cones in graphene/hexagonal boron nitride. Nature Physics, 2016, 12, 1111-1115.	16.7	179

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19	Dual-coupling-guided epitaxial growth of wafer-scale single-crystal WS2 monolayer on vicinal a-plane sapphire. Nature Nanotechnology, 2022, 17, 33-38.	31.5	171
20	Ultrasensitive Monolayer MoS₂ Field-Effect Transistor Based DNA Sensors for Screening of Down Syndrome. Nano Letters, 2019, 19, 1437-1444.	9.1	165
21	Wafer-Scale Highly Oriented Monolayer MoS₂ with Large Domain Sizes. Nano Letters, 2020, 20, 7193-7199.	9.1	160
22	Observation of an intrinsic bandgap and Landau level renormalization in graphene/boron-nitride heterostructures. Nature Communications, 2014, 5, 4461.	12.8	148
23	Thermally Induced Graphene Rotation on Hexagonal Boron Nitride. Physical Review Letters, 2016, 116, 126101.	7.8	142
24	Precise control of the interlayer twist angle in large scale MoS2 homostructures. Nature Communications, 2020, 11, 2153.	12.8	142
25	Ultra-low friction and edge-pinning effect in large-lattice-mismatch van der Waals heterostructures. Nature Materials, 2022, 21, 47-53.	27.5	110
26	Side-group chemical gating via reversible optical and electric control in a single molecule transistor. Nature Communications, 2019, 10, 1450.	12.8	96
27	Precisely Aligned Monolayer MoS₂ Epitaxially Grown on hâ€BN basal Plane. Small, 2017, 13, 1603005.	10.0	91
28	Twist angle-dependent conductivities across MoS2/graphene heterojunctions. Nature Communications, 2018, 9, 4068.	12.8	90
29	Poly(ethylene oxide) Functionalized Graphene Nanoribbons with Excellent Solution Processability. Journal of the American Chemical Society, 2016, 138, 10136-10139.	13.7	83
30	Stereoelectronic Effect-Induced Conductance Switching in Aromatic Chain Single-Molecule Junctions. Nano Letters, 2017, 17, 856-861.	9.1	76
31	Artificial Synapse Based on van der Waals Heterostructures with Tunable Synaptic Functions for Neuromorphic Computing. ACS Applied Materials & Interfaces, 2020, 12, 11945-11954.	8.0	75
32	A robust neuromorphic vision sensor with optical control of ferroelectric switching. Nano Energy, 2021, 89, 106439.	16.0	73
33	Large-scale well aligned carbon nitride nanotube films: Low temperature growth and electron field emission. Journal of Applied Physics, 2001, 89, 5939-5943.	2.5	72
34	Lattice Dynamics, Phonon Chirality, and Spinâ€“Phonon Coupling in 2D Itinerant Ferromagnet Fe₃GeTe₂. Advanced Functional Materials, 2019, 29, 1904734.	14.9	70
35	Introduction of Interfacial Charges to Black Phosphorus for a Family of Planar Devices. Nano Letters, 2016, 16, 6870-6878.	9.1	69
36	Manipulation of domain-wall solitons in bi- and trilayer graphene. Nature Nanotechnology, 2018, 13, 204-208.	31.5	67

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37	Gate-dependent pseudospin mixing in graphene/boron nitride moirÃ© superlattices. Nature Physics, 2014, 10, 743-747.	16.7	64
38	A graphene Zenerâ€“Klein transistor cooled by a hyperbolic substrate. Nature Nanotechnology, 2018, 13, 47-52.	31.5	64
39	From Type-II Triply Degenerate Nodal Points and Three-Band Nodal Rings to Type-II Dirac Points in Centrosymmetric Zirconium Oxide. Journal of Physical Chemistry Letters, 2017, 8, 5792-5797.	4.6	61
40	Rolling Up a Monolayer MoS₂Sheet. Small, 2016, 12, 3770-3774.	10.0	60
41	Switchable friction enabled by nanoscale self-assembly on graphene. Nature Communications, 2016, 7, 10745.	12.8	59
42	Emergence of Interfacial Polarons from Electronâ€“Phonon Coupling in Graphene/h-BN van der Waals Heterostructures. Nano Letters, 2018, 18, 1082-1087.	9.1	55
43	Studies of graphene-based nanoelectromechanical switches. Nano Research, 2012, 5, 82-87.	10.4	54
44	In Situ Oxygen Doping of Monolayer MoS₂ for Novel Electronics. Small, 2020, 16, e2004276.	10.0	54
45	A Reliable Allâ€2D Materials Artificial Synapse for High Energyâ€Efficient Neuromorphic Computing. Advanced Functional Materials, 2021, 31, 2011083.	14.9	53
46	Tuning Charge Transport in Aromaticâ€Ring Singleâ€Molecule Junctions via Ionicâ€Liquid Gating. Angewandte Chemie - International Edition, 2018, 57, 14026-14031.	13.8	52
47	Self-assembly of carbon nanohelices: Characteristics and field electron emission properties. Applied Physics Letters, 2004, 84, 2646-2648.	3.3	50
48	New Floating Gate Memory with Excellent Retention Characteristics. Advanced Electronic Materials, 2019, 5, 1800726.	5.1	48
49	Gate-tunable large-scale flexible monolayer MoS2 devices for photodetectors and optoelectronic synapses. Nano Research, 2022, 15, 5418-5424.	10.4	48
50	Efficient Allâ€Optical Plasmonic Modulators with Atomically Thin Van Der Waals Heterostructures. Advanced Materials, 2020, 32, e1907105.	21.0	44
51	Robust growth of two-dimensional metal dichalcogenides and their alloys by active chalcogen monomer supply. Nature Communications, 2022, 13, 1007.	12.8	42
52	Modulating PL and electronic structures of MoS2/graphene heterostructures via interlayer twisting angle. Applied Physics Letters, 2017, 111, .	3.3	41
53	Layer-by-layer epitaxy of multi-layer MoS2 wafers. National Science Review, 2022, 9, .	9.5	41
54	Integrated Flexible and Highâ€Quality Thin Film Transistors Based on Monolayer MoS₂. Advanced Electronic Materials, 2016, 2, 1500379.	5.1	40

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55	Enhancing and controlling valley magnetic response in MoS2/WS2 heterostructures by all-optical route. Nature Communications, 2019, 10, 4226.	12.8	38
56	Static and Dynamic Piezopotential Modulation in Piezo-Electret Gated MoS₂ Field-Effect Transistor. ACS Nano, 2019, 13, 582-590.	14.6	38
57	Hofstadter Butterfly and Many-Body Effects in Epitaxial Graphene Superlattice. Nano Letters, 2016, 16, 2387-2392.	9.1	36
58	Vapour-phase graphene epitaxy at low temperatures. Nano Research, 2012, 5, 258-264.	10.4	35
59	Electrical Control of Interband Resonant Nonlinear Optics in Monolayer MoS₂. ACS Nano, 2020, 14, 8442-8448.	14.6	34
60	Giant anisotropic photonics in the 1D van der Waals semiconductor fibrous red phosphorus. Nature Communications, 2021, 12, 4822.	12.8	32
61	Patterned Peeling 2D MoS₂ off the Substrate. ACS Applied Materials & Interfaces, 2016, 8, 16546-16550.	8.0	30
62	Strongly enhanced exciton-phonon coupling in two-dimensional <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>WS</mml:mi><mml:msub><mml:mi mathvariant="normal">e</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math>. Physical Review B, 2018, 97, .	3.2	30
63	Waferâ€Scale Oxygenâ€Doped MoS₂ Monolayer. Small Methods, 2021, 5, e2100091.	8.6	30
64	Twist-Angle-Dependent Ultrafast Charge Transfer in MoS₂-Graphene van der Waals Heterostructures. Nano Letters, 2021, 21, 8051-8057.	9.1	30
65	Emergence of Tertiary Dirac Points in Graphene MoirÃ© Superlattices. Nano Letters, 2017, 17, 3576-3581.	9.1	28
66	Magnetotransport Properties of Graphene Nanoribbons with Zigzag Edges. Physical Review Letters, 2018, 120, 216601.	7.8	28
67	2D proximate quantum spin liquid state in atomic-thin Î± -RuCl ₃. 2D Materials, 2019, 6, 015014.	4.4	28
68	Thermally Activated Tunneling Transition in a Photoswitchable Single-Molecule Electrical Junction. Journal of Physical Chemistry Letters, 2017, 8, 2849-2854.	4.6	27
69	Robust spin-valley polarization in commensurate <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>Mo</mml:mi><mml:msub><mml:mi mathvariant="normal">S</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math> /graphene heterostructures. Physical Review B, 2018, 97, .	3.2	27
70	Exchange bias and spinâ€“orbit torque in the Fe3GeTe2-based heterostructures prepared by vacuum exfoliation approach. Applied Physics Letters, 2021, 118, .	3.3	27
71	Graphene: Nanostructure engineering and applications. Frontiers of Physics, 2017, 12, 1.	5.0	26
72	Bandgap broadening at grain boundaries in single-layer MoS2. Nano Research, 2018, 11, 6102-6109.	10.4	26

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73	Atomic Layer Deposition of Al₂O₃ Directly on 2D Materials for Highâ€Performance Electronics. Advanced Materials Interfaces, 2019, 6, 1802055.	3.7	25
74	Ultrashort Verticalâ€Channel van der Waals Semiconductor Transistors. Advanced Science, 2020, 7, 1902964.	11.2	24
75	Temperature-driven evolution of critical points, interlayer coupling, and layer polarization in bilayer <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>Mo</mml:mi><mml:msub><mml:mi>Spin-Torque Ferromagnetic Resonance<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mn></mml:msub></mml:mrow></mml:math>.	3.2	23
76	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:mrow><mml:mrow><mml:mi mathvariant="normal">W</mml:mi></mml:mrow></mml:mrow><mml:mo>/</mml:mo><mml:mi>Co</mml:mi><mml:mstyle displaystyle="false" scriptlevel="0"><mml:mtext>â€“</mml:mtext></mml:mstyle><mml:mi>Fe</mml:mi><mml:mstyle displaystyl	3.8	23
77	Weakened interlayer coupling in two-dimensional MoSe2 flakes with screw dislocations. Nano Research, 2019, 12, 1900-1905.	10.4	23
78	Ultrahigh-resolution scanning microwave impedance microscopy of moirÃ© lattices and superstructures. Science Advances, 2020, 6, .	10.3	23
79	Investigation on interface related charge trap and loss characteristics of high-k based trapping structures by electrostatic force microscopy. Applied Physics Letters, 2011, 99, 223504.	3.3	22
80	Tuning Charge Transport in Aromaticâ€Ring Singleâ€Molecule Junctions via Ionicâ€Liquid Gating. Angewandte Chemie, 2018, 130, 14222-14227.	2.0	22
81	Simultaneous generation of direct- and indirect-gap photoluminescence in multilayer <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>MoS</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:math> bubbles. Physical Review Materials, 2020, 4, .	2.4	21
82	Competitive Growth and Etching of Epitaxial Graphene. Journal of Physical Chemistry C, 2012, 116, 26929-26931.	3.1	20
83	Carbon-based spintronics. Science China: Physics, Mechanics and Astronomy, 2013, 56, 207-221.	5.1	20
84	Fabrication of high-quality all-graphene devices with low contact resistances. Nano Research, 2014, 7, 1449-1456.	10.4	20
85	Vertical Integration of 2D Building Blocks for Allâ€2D Electronics. Advanced Electronic Materials, 2020, 6, 2000550.	5.1	20
86	Isospin competitions and valley polarized correlated insulators in twisted double bilayer graphene. Nature Communications, 2022, 13, .	12.8	20
87	The Effect of Twin Grain Boundary Tuned by Temperature on the Electrical Transport Properties of Monolayer MoS2. Crystals, 2016, 6, 115.	2.2	18
88	Structural superlubricity in 2D van der Waals heterojunctions. Nanotechnology, 2022, 33, 102002.	2.6	18
89	Strong and tunable interlayer coupling of infrared-active phonons to excitons in van der Waals heterostructures. Physical Review B, 2019, 99, .	3.2	17
90	Giant Valley Coherence at Room Temperature in 3R WS ₂ with Broken Inversion Symmetry. Research, 2019, 2019, 6494565.	5.7	17

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91	Imaging gate-tunable Tomonagaâ€“Luttinger liquids in 1H-MoSe2 mirror twin boundaries. Nature Materials, 2022, 21, 748-753.	27.5	17
92	Strongly distinct electrical response between circular and valley polarization in bilayer transition metal dichalcogenides. Physical Review B, 2019, 99, .	3.2	16
93	Atomically Precise Engineering of Singleâ€Molecule Stereoelectronic Effect. Angewandte Chemie - International Edition, 2021, 60, 12274-12278.	13.8	16
94	Noise in Graphene Superlattices Grown on Hexagonal Boron Nitride. ACS Nano, 2015, 9, 11382-11388.	14.6	15
95	Electronic structure of exfoliated millimeter-sized monolayer WSe2 on silicon wafer. Nano Research, 2019, 12, 3095-3100.	10.4	15
96	Control of Unipolar/Ambipolar Transport in Singleâ€Molecule Transistors through Interface Engineering. Advanced Electronic Materials, 2020, 6, 1901237.	5.1	14
97	Skinâ€Inspired Highâ€Performance Activeâ€Matrix Circuitry for Multimodal Userâ€Interaction. Advanced Functional Materials, 2021, 31, 2105480.	14.9	14
98	One-Step Growth of Spatially Graded Mo_{1â€“x}W_xS₂ Monolayers with a Wide Span in Composition (from x = 0 to 1) at a Large Scale. ACS Applied Materials & Interfaces, 2019, 11, 20979-20986.	8.0	12
99	Identification of dominant scattering mechanism in epitaxial graphene on SiC. Applied Physics Letters, 2014, 104, .	3.3	11
100	Robust circular polarization of indirect Q-K transitions in bilayer <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mn>3</mml:mn><mml:mi>R</mml:mi><mml:mo>â^’</mml:m mathvariant="normal">W</mml:mi><mml:msub><mml:mi mathvariant="normal">S</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math>. Physical Review B, 2019, 100, .	3.2	11
101	Monolayer MoS2 epitaxy. Nano Research, 2021, 14, 1598-1608.	10.4	11
102	Spatially indirect intervalley excitons in bilayer <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi mathvariant="normal">W</mml:mi><mml:msub><mml:mi>Se</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math Physical Review B, 2022, 105, .	3.2	11
103	Free-Standing Single-Molecule Thick Crystals Consisting of Linear Long-Chain Polymers. Nano Letters, 2017, 17, 1655-1659.	9.1	10
104	Interlayer exciton complexes in bilayer <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>MoS</mml:mi><mml:mn>2</mml:mn></mml:msub></mml Physical Review B, 2022, 105, .	3.2	10
105	Band evolution of two-dimensional transition metal dichalcogenides under electric fields. Applied Physics Letters, 2019, 115, 083104.	3.3	9
106	Nonvolatile Memory: New Floating Gate Memory with Excellent Retention Characteristics (Adv.) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 14	5.1	8
107	Highly Stretchable MoS₂â€Based Transistors with Optoâ€Synaptic Functionalities. Advanced Electronic Materials, 2022, 8, .	5.1	8
108	Anisotropic Chargeâ€Carrier Transport in Highâ€Mobility Donorâ€“Acceptor Conjugated Polymer Semiconductor Films. Chemistry - an Asian Journal, 2016, 11, 2725-2729.	3.3	7

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109	High-order minibands and interband Landau level reconstruction in graphene moirÃ© superlattices. Physical Review B, 2020, 102, .	3.2	7
110	Fabrication and Functioning of Magnetically Gated PET Nanochannels. ChemNanoMat, 2020, 6, 1075-1079.	2.8	7
111	Anomalous anisotropic magnetoresistance effects in graphene. AIP Advances, 2014, 4, 097101.	1.3	6
112	Observation of logarithmic Kohn anomaly in monolayer graphene. Physical Review B, 2020, 102, .	3.2	6
113	Enhanced critical field and anomalous metallic state in two-dimensional centrosymmetric <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mn>1</mml:mn><mml:msup><mml:mi>T</mml:mi><mml:mo mathvariant="normal">W</mml:mi><mml:msub><mml:mi mathvariant="normal">S</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math>. Physical Review B, 2022, 105, .	3.2	6
114	The interface of epitaxial nanographene on GaN by PECVD. AIP Advances, 2019, 9, 095060.	1.3	5
115	Determining Quasiparticle Bandgap of Two-Dimensional Transition Metal Dichalcogenides by Observation of Hot Carrier Relaxation Dynamics. Journal of Physical Chemistry Letters, 2021, 12, 585-591.	4.6	4
116	Real-space detection and manipulation of two-dimensional quantum well states in few-layer <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>MoS</mml:mi><mml:mn>2</mml:mn></mml:msub></mm Physical Review B, 2022, 105, .	3.2	4
117	Persistence of Monoclinic Crystal Structure in 3D Secondâ€Order Topological Insulator Candidate 1 T â€²â€MoTe ₂ Thin Flake Without Structural Phase Transition. Advanced Science, 2022, 9, 2101532.	11.2	4
118	Repairable Polymer Solid Electrolyte Gated MoS₂ Field Effect Devices with Large Radiation Tolerance. Advanced Electronic Materials, 2022, 8, 2100619.	5.1	3
119	Experimental evidence of plasmarons and effective fine structure constant in electron-doped graphene/h-BN heterostructure. Npj Quantum Materials, 2021, 6, .	5.2	3
120	Atomic Layer Deposition: Atomic Layer Deposition of Al₂O₃ Directly on 2D Materials for Highâ€Performance Electronics (Adv. Mater. Interfaces 10/2019). Advanced Materials Interfaces, 2019, 6, 1970065.	3.7	2
121	Artificial Synapses: A Reliable Allâ€2D Materials Artificial Synapse for High Energyâ€Efficient Neuromorphic Computing (Adv. Funct. Mater. 27/2021). Advanced Functional Materials, 2021, 31, 2170197.	14.9	2
122	Rail-to-Rail MoS₂ Inverters. ACS Applied Electronic Materials, 2022, 4, 2636-2640.	4.3	2
123	High turnover and rescue effect of XRCC1 inÂresponse to heavy charged particle radiation. Biophysical Journal, 2022, , .	0.5	1
124	Investigation of charge trap and loss characteristics for charge trap memory by electrostatic force microscopy. , 2011, , .		0
125	High Performance MAHAHOS Memory Devices: Charge Trapping and Distribution in Bandgap Engineered Structure. , 2012, , .		0
126	Frontispiz: Tuning Charge Transport in Aromatic-Ring Single-Molecule Junctions via Ionic-Liquid Gating. Angewandte Chemie, 2018, 130, .	2.0	0

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127	Frontispiece: Tuning Charge Transport in Aromatic-Ring Single-Molecule Junctions via Ionic-Liquid Gating. Angewandte Chemie - International Edition, 2018, 57, .	13.8	0
128	Inside Back Cover: Waferâ€Scale Oxygenâ€Doped MoS₂ Monolayer (Small Methods 6/2021). Small Methods, 2021, 5, 2170026.	8.6	0
129	Hot-Pressed Two-Dimensional Amorphous Metals and Their Electronic Properties. Crystals, 2022, 12, 616.	2.2	0