

Wang Yao

List of Publications by Year in descending order

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163
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167
times ranked

23268
citing authors

#	ARTICLE	IF	CITATIONS
1	Ultrafast control of moiré pseudo-electromagnetic field in homobilayer semiconductors. <i>Natural Sciences</i> , 2022, 2, .	2.1	3
2	Light-induced ferromagnetism in moiré superlattices. <i>Nature</i> , 2022, 604, 468-473.	27.8	61
3	Chiral Excitonics in Monolayer Semiconductors on Patterned Dielectrics. <i>Physical Review Letters</i> , 2022, 128, .	7.8	4
4	Anomalous Magneto-Optical Response and Chiral Interface of Dipolar Excitons at Twisted Valleys. <i>Nano Letters</i> , 2022, 22, 5466-5472.	9.1	2
5	Anomalous Bloch oscillation and electrical switching of edge magnetization in a bilayer graphene nanoribbon. <i>Physical Review B</i> , 2022, 106, .	3.2	1
6	Intrinsic donor-bound excitons in ultraclean monolayer semiconductors. <i>Nature Communications</i> , 2021, 12, 871.	12.8	29
7	Deep moiré potentials in twisted transition metal dichalcogenide bilayers. <i>Nature Physics</i> , 2021, 17, 720-725.	16.7	124
8	Moiré excitons at line defects in transition metal dichalcogenides heterobilayers. <i>Comptes Rendus Physique</i> , 2021, 22, 53-68.	0.9	1
9	Highly anisotropic excitons and multiple phonon bound states in a van der Waals antiferromagnetic insulator. <i>Nature Nanotechnology</i> , 2021, 16, 655-660.	31.5	72
10	Universal superlattice potential for 2D materials from twisted interface inside h-BN substrate. <i>Npj 2D Materials and Applications</i> , 2021, 5, .	7.9	23
11	Luminescence Anomaly of Dipolar Valley Excitons in Homobilayer Semiconductor Moiré Superlattices. <i>Physical Review X</i> , 2021, 11, .	8.9	10
12	Multifunctional antiferromagnetic materials with giant piezomagnetism and noncollinear spin current. <i>Nature Communications</i> , 2021, 12, 2846.	12.8	38
13	Revealing the non-adiabatic and non-Abelian multiple-band effects via anisotropic valley Hall conduction in bilayer graphene. <i>2D Materials</i> , 2021, 8, 045012.	4.4	1
14	Moiré trions in MoSe ₂ /WSe ₂ heterobilayers. <i>Nature Nanotechnology</i> , 2021, 16, 1208-1213.	31.5	50
15	Interferences of electrostatic moiré potentials and bichromatic superlattices of electrons and excitons in transition metal dichalcogenides. <i>2D Materials</i> , 2021, 8, 025007.	4.4	17
16	Twist versus heterostrain control of optical properties of moiré exciton minibands. <i>2D Materials</i> , 2021, 8, 044016.	4.4	11
17	Spin photovoltaic effect in magnetic van der Waals heterostructures. <i>Science Advances</i> , 2021, 7, eabg8094.	10.3	15
18	Excitons and emergent quantum phenomena in stacked 2D semiconductors. <i>Nature</i> , 2021, 599, 383-392.	27.8	136

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37	Layer Pseudospin Dynamics and Genuine Non-Abelian Berry Phase in Inhomogeneously Strained Moiré Pattern. <i>Physical Review Letters</i> , 2020, 125, 266404.	7.8	9
38	Theory of tunable flux lattices in the homobilayer moiré of twisted and uniformly strained transition metal dichalcogenides. <i>Physical Review Materials</i> , 2020, 4, .	2.4	20
39	Coulomb effects on topological band inversion in the moiré of WSe ₂ /BAs heterobilayer. <i>2D Materials</i> , 2019, 6, 045037.	4.4	3
40	Magnetic Proximity Effect in a van der Waals Moiré Superlattice. <i>Physical Review Applied</i> , 2019, 12, .	3.8	26
41	Giant nonreciprocal second-harmonic generation from antiferromagnetic bilayer CrI ₃ . <i>Nature</i> , 2019, 572, 497-501.	27.8	309
42	Voltage Control of a van der Waals Spin-Filter Magnetic Tunnel Junction. <i>Nano Letters</i> , 2019, 19, 915-920.	9.1	129
43	Linearly Polarized Luminescence of Atomically Thin MoS ₂ Semiconductor Nanocrystals. <i>ACS Nano</i> , 2019, 13, 13006-13014.	14.6	24
44	Engineering Point-Defect States in Monolayer WSe ₂ . <i>ACS Nano</i> , 2019, 13, 1595-1602.	14.6	35
45	Gate tuning from exciton superfluid to quantum anomalous Hall in van der Waals heterobilayer. <i>Science Advances</i> , 2019, 5, eaau6120.	10.3	23
46	Cross-dimensional electron-phonon coupling in van der Waals heterostructures. <i>Nature Communications</i> , 2019, 10, 2419.	12.8	60
47	Theoretical Design of Topological Heteronanotubes. <i>Nano Letters</i> , 2019, 19, 4146-4150.	9.1	19
48	Atomically Thin CrCl ₃ : An In-Plane Layered Antiferromagnetic Insulator. <i>Nano Letters</i> , 2019, 19, 3993-3998.	9.1	240
49	Probing the exciton k-space dynamics in monolayer tungsten diselenides. <i>2D Materials</i> , 2019, 6, 025035.	4.4	4
50	Nonlinear optics in the electron-hole continuum in 2D semiconductors: two-photon transition, second harmonic generation and valley current injection. <i>Science Bulletin</i> , 2019, 64, 1036-1043.	9.0	4
51	Signatures of moiré-trapped valley excitons in MoSe ₂ /WSe ₂ heterobilayers. <i>Nature</i> , 2019, 567, 66-70.	27.8	842
52	Tailoring excitonic states of van der Waals bilayers through stacking configuration, band alignment, and valley spin. <i>Science Advances</i> , 2019, 5, eaax7407.	10.3	56
53	Symmetry-Controlled Electron-Phonon Interactions in van der Waals Heterostructures. <i>ACS Nano</i> , 2019, 13, 552-559.	14.6	20
54	Electrical control of 2D magnetism in bilayer CrI ₃ . <i>Nature Nanotechnology</i> , 2018, 13, 544-548.	31.5	975

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55	Giant tunneling magnetoresistance in spin-filter van der Waals heterostructures. <i>Science</i> , 2018, 360, 1214-1218.	12.6	871
56	Brightened spin-triplet interlayer excitons and optical selection rules in van der Waals heterobilayers. <i>2D Materials</i> , 2018, 5, 035021.	4.4	107
57	Ligand-field helical luminescence in a 2D ferromagnetic insulator. <i>Nature Physics</i> , 2018, 14, 277-281.	16.7	275
58	Nanometrology of field gradient using donor spins in silicon. <i>Journal of Physics Condensed Matter</i> , 2018, 30, 425301.	1.8	0
59	Skyrmions in the Moiré of van der Waals 2D Magnets. <i>Nano Letters</i> , 2018, 18, 7194-7199.	9.1	168
60	Moiré Valleytronics: Realizing Dense Arrays of Topological Helical Channels. <i>Physical Review Letters</i> , 2018, 121, 186403.	7.8	19
61	Interface excitons at lateral heterojunctions in monolayer semiconductors. <i>Physical Review B</i> , 2018, 98, .	3.2	28
62	Valley Manipulation by Optically Tuning the Magnetic Proximity Effect in WSe_2/CrI_3 Heterostructures. <i>Nano Letters</i> , 2018, 18, 3823-3828.	9.1	281
63	Two-dimensional itinerant ferromagnetism in atomically thin Fe_3GeTe_2 . <i>Nature Materials</i> , 2018, 17, 778-782.	27.5	995
64	Interlayer valley excitons in heterobilayers of transition metal dichalcogenides. <i>Nature Nanotechnology</i> , 2018, 13, 1004-1015.	31.5	373
65	Stacking symmetry governed second harmonic generation in graphene trilayers. <i>Science Advances</i> , 2018, 4, eaat0074.	10.3	75
66	Unusual Exciton-Phonon Interactions at van der Waals Engineered Interfaces. <i>Nano Letters</i> , 2017, 17, 1194-1199.	9.1	81
67	Many-body effects in nonlinear optical responses of 2D layered semiconductors. <i>2D Materials</i> , 2017, 4, 025024.	4.4	35
68	Realization of Valley and Spin Pumps by Scattering at Nonmagnetic Disorders. <i>Physical Review Letters</i> , 2017, 118, 096602.	7.8	30
69	Switchable valley functionalities of an hBN hBN junctions. <i>2D Materials</i> , 2017, 4, 025109.	4.4	5
70	Layer-dependent ferromagnetism in a van der Waals crystal down to the monolayer limit. <i>Nature</i> , 2017, 546, 270-273.	27.8	3,824
71	Interlayer coupling in commensurate and incommensurate bilayer structures of transition-metal dichalcogenides. <i>Physical Review B</i> , 2017, 95, .	3.2	128
72	Optical selection rules for excitonic Rydberg series in the massive Dirac cones of hexagonal two-dimensional materials. <i>Physical Review B</i> , 2017, 95, .	3.2	23

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73	Interlayer Exciton Optoelectronics in a 2D Heterostructure p-n Junction. Nano Letters, 2017, 17, 638-643.	9.1	253
74	Magnetization without polarization. Nature Materials, 2017, 16, 876-877.	27.5	14
75	Van der Waals engineering of ferromagnetic semiconductor heterostructures for spin and valleytronics. Science Advances, 2017, 3, e1603113.	10.3	635
76	Valley-Spin Physics in 2D Semiconducting Transition Metal Dichalcogenides. , 2017, , 279-294.		1
77	Phonon-assisted oscillatory exciton dynamics in monolayer MoSe2. Npj 2D Materials and Applications, 2017, 1, .	7.9	50
78	Moiré excitons: From programmable quantum emitter arrays to spin-orbit-coupled artificial lattices. Science Advances, 2017, 3, e1701696.	10.3	427
79	Topological mosaics in moiré superlattices of van der Waals heterobilayers. Nature Physics, 2017, 13, 356-362.	16.7	205
80	Directional interlayer spin-valley transfer in two-dimensional heterostructures. Nature Communications, 2016, 7, 13747.	12.8	106
81	Single Defect Light-Emitting Diode in a van der Waals Heterostructure. Nano Letters, 2016, 16, 3944-3948.	9.1	115
82	Visualizing band offsets and edge states in bilayer-monolayer transition metal dichalcogenides lateral heterojunction. Nature Communications, 2016, 7, 10349.	12.8	120
83	Spin-valley qubit in nanostructures of monolayer semiconductors: Optical control and hyperfine interaction. Physical Review B, 2016, 93, .	3.2	56
84	Valleytronics in 2D materials. Nature Reviews Materials, 2016, 1, .	48.7	1,712
85	Valley-polarized exciton dynamics in a 2D semiconductor heterostructure. Science, 2016, 351, 688-691.	12.6	606
86	Excitonic luminescence upconversion in a two-dimensional semiconductor. Nature Physics, 2016, 12, 323-327.	16.7	187
87	Nonlinear Spectroscopy of Valley Excitons in 2D Semiconductors and Heterostructures. , 2016, , .		0
88	Anomalous Light Cones and Valley Optical Selection Rules of Interlayer Excitons in Twisted Heterobilayers. Physical Review Letters, 2015, 115, 187002.	7.8	194
89	Berry Phase Modification to the Energy Spectrum of Excitons. Physical Review Letters, 2015, 115, 166803.	7.8	93
90	Molecules in flatland. Nature Physics, 2015, 11, 448-449.	16.7	5

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91	Magnetic control of valley pseudospin in monolayer WSe ₂ . Nature Physics, 2015, 11, 148-152.	16.7	720
92	Valley excitons in two-dimensional semiconductors. National Science Review, 2015, 2, 57-70.	9.5	254
93	Observation of long-lived interlayer excitons in monolayer MoSe ₂ /WSe ₂ heterostructures. Nature Communications, 2015, 6, 6242.	12.8	1,252
94	Population Pulsation Resonances of Excitons in Monolayer MoSe ₂ /WSe ₂ Heterostructures. Physical Review Letters, 2015, 114, 137402.	7.8	25
95	Electrical control of second-harmonic generation in a WSe ₂ monolayer transistor. Nature Nanotechnology, 2015, 10, 407-411.	31.5	406
96	Single quantum emitters in monolayer semiconductors. Nature Nanotechnology, 2015, 10, 497-502.	31.5	749
97	Monolayer semiconductor nanocavity lasers with ultralow thresholds. Nature, 2015, 520, 69-72.	27.8	713
98	Gate-tunable topological valley transport in bilayer graphene. Nature Physics, 2015, 11, 1027-1031.	16.7	301
99	Feedback control of nuclear spin bath of a single hole spin in a quantum dot. Physical Review B, 2015, 91, .	3.2	3
100	Observation of intervalley quantum interference in epitaxial monolayer tungsten diselenide. Nature Communications, 2015, 6, 8180.	12.8	55
101	Electronic structures and theoretical modelling of two-dimensional group-VIB transition metal dichalcogenides. Chemical Society Reviews, 2015, 44, 2643-2663.	38.1	528
102	Intervalley coupling by quantum dot confinement potentials in monolayer transition metal dichalcogenides. New Journal of Physics, 2014, 16, 105011.	2.9	60
103	Spin-layer locking effects in optical orientation of exciton spin in bilayer WSe ₂ . Nature Physics, 2014, 10, 130-134.	16.7	297
104	Spin and pseudospins in layered transition metal dichalcogenides. Nature Physics, 2014, 10, 343-350.	16.7	2,204
105	Electrically tunable excitonic light-emitting diodes based on monolayer WSe ₂ p-n junctions. Nature Nanotechnology, 2014, 9, 268-272.	31.5	1,434
106	Control of two-dimensional excitonic light emission via photonic crystal. 2D Materials, 2014, 1, 011001.	4.4	144
107	Lateral heterojunctions within monolayer MoSe ₂ /WSe ₂ semiconductors. Nature Materials, 2014, 13, 1096-1101.	27.5	872
108	Dense Network of One-Dimensional Midgap Metallic Modes in Monolayer MoSe ₂ /WSe ₂ Heterostructures and Their Spatial Undulations. Physical Review Letters, 2014, 113, 066105.	7.8	172

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109	Nonlinear Valley and Spin Currents from Fermi Pocket Anisotropy in 2D Crystals. Physical Review Letters, 2014, 113, 156603.	7.8	80
110	Spin-orbit-coupled quantum wires and Majorana fermions on zigzag edges of monolayer transition-metal dichalcogenides. Physical Review B, 2014, 89, .	3.2	60
111	Valley-splitting and valley-dependent inter-Landau-level optical transitions in monolayer MoS_2 quantum Hall systems. Physical Review B, 2014, 90, .	3.2	67
112	Dirac cones and Dirac saddle points of bright excitons in monolayer transition metal dichalcogenides. Nature Communications, 2014, 5, 3876.	12.8	262
113	2D-material Based Nano-photonics. , 2014, , .		0
114	Optical generation of excitonic valley coherence in monolayer WSe ₂ . Nature Nanotechnology, 2013, 8, 634-638.	31.5	1,210
115	Magnetic control of the valley degree of freedom of massive Dirac fermions with application to transition metal dichalcogenides. Physical Review B, 2013, 88, .	3.2	121
116	Three-band tight-binding model for monolayers of group-VIB transition metal dichalcogenides. Physical Review B, 2013, 88, .	3.2	715
117	Electrical tuning of valley magnetic moment through symmetry control in bilayer MoS ₂ . Nature Physics, 2013, 9, 149-153.	16.7	540
118	Entanglement detection and quantum metrology by Raman photon-diffraction imaging. Physical Review A, 2013, 87, .	2.5	7
119	Electrical control of neutral and charged excitons in a monolayer semiconductor. Nature Communications, 2013, 4, 1474.	12.8	1,246
120	Intervalley Scattering and Localization Behaviors of Spin-Valley Coupled Dirac Fermions. Physical Review Letters, 2013, 110, 016806.	7.8	152
121	Optical signature of symmetry variations and spin-valley coupling in atomically thin tungsten dichalcogenides. Scientific Reports, 2013, 3, 1608.	3.3	836
122	Magnetoelectric effects and valley-controlled spin quantum gates in transition metal dichalcogenide bilayers. Nature Communications, 2013, 4, 2053.	12.8	302
123	Protecting dissipative quantum state preparation via dynamical decoupling. Physical Review A, 2013, 87, .	2.5	7
124	The Nuclear Dark State under Dynamical Nuclear Polarization. Chinese Physics Letters, 2013, 30, 077302.	3.3	2
125	Fault-tolerant almost exact state transmission. Scientific Reports, 2013, 3, 3128.	3.3	14
126	Optical generation of valley polarization in atomically thin semiconductors. , 2013, , .		1

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127	Optical manipulation and electrical control of valley pseudo-spins in atomically thin semiconductors. Proceedings of SPIE, 2013, , .	0.8	0
128	Persistent optical nuclear spin narrowing in a singly charged InAs quantum dot. Journal of the Optical Society of America B: Optical Physics, 2012, 29, A119.	2.1	2
129	Deterministic preparation of Dicke states of donor nuclear spins in silicon by cooperative pumping. Physical Review B, 2012, 85, .	3.2	7
130	Coupled Spin and Valley Physics in Monolayers of MoS_2 and Other Group-VI Dichalcogenides. Physical Review Letters, 2012, 108, 196802.	7.8	3,872
131	Ultrafast hot-carrier-dominated photocurrent in graphene. Nature Nanotechnology, 2012, 7, 114-118.	31.5	362
132	Intrinsic spin Hall effect in monolayers of group-VI dichalcogenides: A first-principles study. Physical Review B, 2012, 86, .	3.2	213
133	Quantum-Enhanced Tunable Second-Order Optical Nonlinearity in Bilayer Graphene. Nano Letters, 2012, 12, 2032-2036.	9.1	115
134	Valley polarization in MoS_2 monolayers by optical pumping. Nature Nanotechnology, 2012, 7, 490-493.	31.5	3,036
135	Generating coherent states of entangled spins. Physical Review A, 2011, 84, .	2.5	8
136	Many-body singlets by dynamic spin polarization. Physical Review B, 2011, 83, .	3.2	11
137	Feedback control of nuclear hyperfine fields in a double quantum dot. Europhysics Letters, 2010, 92, 17008.	2.0	7
138	Quantum size effects on the work function of metallic thin film nanostructures. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 12761-12765.	7.1	61
139	Massive Dirac fermions and spin physics in an ultrathin film of topological insulator. Physical Review B, 2010, 81, .	3.2	511
140	Quantum computing by optical control of electron spins. Advances in Physics, 2010, 59, 703-802.	14.4	102
141	Optically controlled locking of the nuclear field via coherent dark-state spectroscopy. Nature, 2009, 459, 1105-1109.	27.8	208
142	Edge States in Graphene: From Gapped Flat-Band to Gapless Chiral Modes. Physical Review Letters, 2009, 102, 096801.	7.8	328
143	Stimulated Raman spin coherence and spin-flip induced hole burning in charged GaAs quantum dots. Physical Review B, 2008, 77, .	3.2	6
144	Valley-dependent optoelectronics from inversion symmetry breaking. Physical Review B, 2008, 77, .	3.2	845

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145	CONTROL OF ELECTRON SPIN DECOHERENCE IN MESOSCOPIC NUCLEAR SPIN BATHS. International Journal of Modern Physics B, 2008, 22, 27-32.	2.0	0
146	Berry Phase Effect on the Exciton Transport and on the Exciton Bose-Einstein Condensate. Physical Review Letters, 2008, 101, 106401.	7.8	54
147	Control of electron spin decoherence caused by electronâ€“nuclear spin dynamics in a quantum dot. New Journal of Physics, 2007, 9, 226-226.	2.9	92
148	Nonlinear Optical Probe of a Singly-Charged Stranski-Krastanow Quantum Dot. , 2007, , .		0
149	Restoring Coherence Lost to a Slow Interacting Mesoscopic Spin Bath. Physical Review Letters, 2007, 98, 077602.	7.8	138
150	Nonlinear optical probe of a singly-charged stranski-krastanow quantum dot. , 2007, , .		0
151	Optically manipulating spins in semiconductor quantum dots. Journal of Applied Physics, 2007, 101, 081721.	2.5	6
152	Single-electron spin decoherence by nuclear spin bath: Linked-cluster expansion approach. Physical Review B, 2007, 75, .	3.2	73
153	Optical Control of Topological Quantum Transport in Semiconductors. Physical Review Letters, 2007, 99, 047401.	7.8	56
154	Valley-Contrasting Physics in Graphene: Magnetic Moment and Topological Transport. Physical Review Letters, 2007, 99, 236809.	7.8	1,730
155	Spin relaxation in charged quantum dots measured by coherent optical phase modulation spectroscopy. Solid State Communications, 2006, 140, 381-385.	1.9	11
156	Theory of electron spin decoherence by interacting nuclear spins in a quantum dot. Physical Review B, 2006, 74, .	3.2	264
157	Theory of control of the dynamics of the interface between stationary and flying qubits. Journal of Optics B: Quantum and Semiclassical Optics, 2005, 7, S318-S325.	1.4	12
158	Coherent control of cavity quantum electrodynamics for quantum nondemolition measurements and ultrafast cooling. Physical Review B, 2005, 72, .	3.2	21
159	Theory of Control of the Spin-Photon Interface for Quantum Networks. Physical Review Letters, 2005, 95, 030504.	7.8	175
160	Nanodot-Cavity Electrodynamics and Photon Entanglement. Physical Review Letters, 2004, 92, 217402.	7.8	29
161	Enhancement of the Kerr effect for a quantum dot in a cavity. Superlattices and Microstructures, 2003, 34, 213-217.	3.1	10
162	Optical Properties of TMD Heterostructures. , 0, , 310-328.		2

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163	Optical signature of symmetry variations and spin-valley coupling in atomically thin tungsten dichalcogenides. , 0, .		1