Xiangang Wan

List of Publications by Citations

121 papers	7,874 citations	37 h-index	88 g-index
134 ext. papers	9,616 ext. citations	6.2 avg, IF	6.27 L-index

#	Paper	IF	Citations
121	Topological semimetal and Fermi-arc surface states in the electronic structure of pyrochlore iridates. *Physical Review B*, **2011**, 83,	3.3	3032
120	Integrated digital inverters based on two-dimensional anisotropic ReS2 field-effect transistors. *Nature Communications*, **2015**, 6, 6991	17.4	417
119	Comprehensive search for topological materials using symmetry indicators. *Nature*, **2019**, 566, 486-489	50.4	297
118	Pressure-driven dome-shaped superconductivity and electronic structural evolution in tungsten ditelluride. *Nature Communications*, **2015**, 6, 7805	17.4	254
117	Manipulation of the large Rashba spin splitting in polar two-dimensional transition-metal dichalcogenides. *Physical Review B*, **2017**, 95,	3.3	166
116	Gate-tunable negative longitudinal magnetoresistance in the predicted type-II Weyl semimetal WTe. *Nature Communications*, **2016**, 7, 13142	17.4	166
115	Signature of Strong Spin-Orbital Coupling in the Large Nonsaturating Magnetoresistance Material WTe2. *Physical Review Letters*, **2015**, 115, 166601	7.4	164
114	Concepts of ferrovalley material and anomalous valley Hall effect. *Nature Communications*, **2016**, 7, 13612	17.4	143
113	Nontrivial Berry phase and type-II Dirac transport in the layered material PdTe2. *Physical Review B*, **2017**, 96,	3.3	135
112	Room-temperature ferromagnetism and ferroelectricity in Fe-doped BaTiO3. *Physical Review B*, **2009**, 79,	3.3	132
111	Electron-phonon superconductivity near charge-density-wave instability in LaO0.5F0.5BiS2: Density-functional calculations. *Physical Review B*, **2013**, 87,	3.3	126
110	Experimental Demonstration of Acoustic Chern Insulators. *Physical Review Letters*, **2019**, 122, 014302	7.4	113
109	Electronic and magnetic properties of zigzag graphene nanoribbon with one edge saturated. *Applied Physics Letters*, **2010**, 96, 163102	3.4	112
108	Raman vibrational spectra of bulk to monolayer ReS2 with lower symmetry. *Physical Review B*, **2015**, 92,	3.3	110
107	Computational design of axion insulators based on 5d spinel compounds. *Physical Review Letters*, **2012**, 108, 146601	7.4	101
106	Evidence of Both Surface and Bulk Dirac Bands and Anisotropic Nonsaturating Magnetoresistance in ZrSiS. *Advanced Electronic Materials*, **2016**, 2, 1600228	6.4	98
105	Pressure-induced superconductivity in a three-dimensional topological material ZrTe5. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 2904-9	11.5	91

104	CaTe: a new topological node-line and Dirac semimetal. *Npj Quantum Materials*, **2017**, 2,	5	87
103	Spin-orbit tuned metal-insulator transitions in single-crystal Sr2Ir1−xRhxO4 (0≤x≤1). *Physical Review B*, **2012**, 86,	3.3	86
102	First-principles study of thermal properties of borophene. *Physical Chemistry Chemical Physics*, **2016**, 18, 14927-32	3.6	85
101	The In-Plane Anisotropy of WTe2 Investigated by Angle-Dependent and Polarized Raman Spectroscopy. *Scientific Reports*, **2016**, 6, 29254	4.9	82
100	Unexpected magnetic semiconductor behavior in zigzag phosphorene nanoribbons driven by half-filled one dimensional band. *Scientific Reports*, **2015**, 5, 8921	4.9	80
99	Efficient topological materials discovery using symmetry indicators. *Nature Physics*, **2019**, 15, 470-476	16.2	79
98	Electronic structure of single-crystalline NdO0.5F0.5BiS2 studied by angle-resolved photoemission spectroscopy. *Physical Review B*, **2014**, 90,	3.3	57
97	Pressure-Induced New Topological Weyl Semimetal Phase in TaAs. *Physical Review Letters*, **2016**, 117, 146402	7.4	52
96	Rules for Phase Shifts of Quantum Oscillations in Topological Nodal-Line Semimetals. *Physical Review Letters*, **2018**, 120, 146602	7.4	51
95	Ferromagnetic and antiferromagnetic properties of the semihydrogenated SiC sheet. *Applied Physics Letters*, **2010**, 96, 143111	3.4	51
94	Turning a band insulator into an exotic superconductor. *Nature Communications*, **2014**, 5, 4144	17.4	49
93	Direct observation of the Dirac nodes lifting in semimetallic perovskite SrIrO3 thin films. *Scientific Reports*, **2016**, 6, 30309	4.9	47
92	Metallic ferroelectricity induced by anisotropic unscreened Coulomb interaction in LiOsO3. *Physical Review B*, **2015**, 91,	3.3	44
91	Calculation of magnetic exchange interactions in Mott-Hubbard systems. *Physical Review Letters*, **2006**, 97, 266403	7.4	44
90	Dirac and Weyl Semimetal in XYBi (X = Ba, Eu; Y = Cu, Ag and Au). *Scientific Reports*, **2015**, 5, 14423	4.9	43
89	Robust magnetic moments on the basal plane of the graphene sheet effectively induced by OH groups. *Scientific Reports*, **2015**, 5, 8448	4.9	42
88	Calculated momentum dependence of Zhang-Rice states in transition metal oxides. *Physical Review Letters*, **2008**, 100, 066406	7.4	42
87	Ultrahigh conductivity in Weyl semimetal NbAs nanobelts. *Nature Materials*, **2019**, 18, 482-488	27	40

86	The effect of acoustic phonon scattering on the carrier mobility in the semiconducting zigzag single wall carbon nanotubes. *Applied Physics Letters*, **2010**, 96, 183108	3.4	39
85	Anisotropic ultrasensitive PdTe-based phototransistor for room-temperature long-wavelength detection. *Science Advances*, **2020**, 6,	14.3	39
84	Mechanism of magnetic exchange interactions in europium monochalcogenides. *Physical Review B*, **2011**, 83,	3.3	36
83	Discovery of coexisting Dirac and triply degenerate magnons in a three-dimensional antiferromagnet. *Nature Communications*, **2018**, 9, 2591	17.4	36
82	The positive piezoconductive effect in graphene. *Nature Communications*, **2015**, 6, 8119	17.4	32
81	Anomalous in-plane anisotropic Raman response of monoclinic semimetal 1 T′-MoTe. *Scientific Reports*, **2017**, 7, 1758	4.9	32
80	Experimental evidence and control of the bulk-mediated intersurface coupling in topological insulator Bi2Te2Se nanoribbons. *Physical Review B*, **2015**, 91,	3.3	31
79	Experimental Observation of the Gate-Controlled Reversal of the Anomalous Hall Effect in the Intrinsic Magnetic Topological Insulator MnBiTe Device. *Nano Letters*, **2020**, 20, 709-714	11.5	31
78	Electronic structure and optical properties of layered perovskites Sr2MO4 (M=Ti, V, Cr, and Mn): An ab initio study. *Physical Review B*, **2006**, 74,	3.3	30
77	Electronic structure and magnetic properties of NaOsO3. *Physical Review B*, **2012**, 85,	3.3	29
76	Direct Observation of Landau Level Resonance and Mass Generation in Dirac Semimetal CdAs Thin Films. *Nano Letters*, **2017**, 17, 2211-2219	11.5	28
75	Band Structure Perfection and Superconductivity in Type-II Dirac Semimetal Ir Pt Te. *Advanced Materials*, **2018**, 30, e1801556	24	28
74	Carrier balance and linear magnetoresistance in type-II Weyl semimetal WTe2. *Frontiers of Physics*, **2017**, 12, 1	3.7	27
73	Topological materials discovery by large-order symmetry indicators. *Science Advances*, **2019**, 5, eaau8725	14.3	27
72	Cleavage tendency of anisotropic two-dimensional materials: ReX2 (X=S,Se) and WTe2. *Physical Review B*, **2017**, 96,	3.3	26
71	Hopf-link topological nodal-loop semimetals. *Physical Review B*, **2018**, 97,	3.3	25
70	Orbital polarization, surface enhancement and quantum confinement in nanocluster magnetism. *Physical Review B*, **2004**, 69,	3.3	25
69	The electronic structures and magnetic properties of perovskite ruthenates from constrained orbital-hybridization calculations. *Europhysics Letters*, **2010**, 92, 57007	1.6	24

68	Tuning Electrical Conductance in Bilayer MoS through Defect-Mediated Interlayer Chemical Bonding. *ACS Nano*, **2020**, 14, 10265-10275	16.7	22
67	Topological semimetal state and field-induced Fermi surface reconstruction in the antiferromagnetic monopnictide NdSb. *Physical Review B*, **2018**, 97,	3.3	22
66	Exchange interactions and sensitivity of the Ni two-hole spin state to Hund coupling in doped NdNiO2. *Physical Review B*, **2021**, 103,	3.3	22
65	The polarization-dependent anisotropic Raman response of few-layer and bulk WTe2 under different excitation wavelengths. *RSC Advances*, **2016**, 6, 103830-103837	3.7	21
64	Three-Dimensional Anisotropic Magnetoresistance in the Dirac Node-Line Material ZrSiSe. *Scientific Reports*, **2018**, 8, 9340	4.9	21
63	Electron-phonon superconductivity in LaO0.5F0.5BiSe2. *Journal of Applied Physics*, **2014**, 115, 233901	2.5	21
62	BaFe2Se2O as an iron-based Mott insulator with antiferromagnetic order. *Physical Review B*, **2012**, 86,	3.3	21
61	Emergence of topological nodal lines and type-II Weyl nodes in the strong spin-orbit coupling system InNbX2 (X=S,Se). *Physical Review B*, **2017**, 96,	3.3	19
60	Bethe-Slater-curve-like behavior and interlayer spin-exchange coupling mechanisms in two-dimensional magnetic bilayers. *Physical Review B*, **2020**, 102,	3.3	18
59	Pressure-induced superconductivity in MoP. *Npj Quantum Materials*, **2018**, 3,	5	18
58	Quantum oscillations in type-II Dirac semimetal PtTe2. *Physical Review B*, **2018**, 97,	3.3	17
57	Two-dimensional topological materials discovery by symmetry-indicator method. *Physical Review B*, **2019**, 100,	3.3	17
56	Calculated magnetic exchange interactions in high-temperature superconductors. *Physical Review B* , **2009**, 79,	3.3	17
55	Concepts of the half-valley-metal and quantum anomalous valley Hall effect. *Npj Computational Materials*, **2020**, 6,	10.9	17
54	High surface conductivity of Fermi-arc electrons in Weyl semimetals. *Physical Review B*, **2018**, 97,	3.3	16
53	Spin-dependent optical response of multiferroic EuO: First-principles DFT calculations. *Physical Review B*, **2014**, 89,	3.3	16
52	Microscopic origin of stereochemically active lone pair formation from orbital selective external potential calculations. *Journal of Physics Condensed Matter*, **2014**, 26, 025503	1.8	16
51	Orbital-dependent electronic masses in Ce heavy-fermion materials studied via Gutzwiller density-functional theory. *Physical Review B*, **2014**, 89,	3.3	14

50	Evidence for singular-phonon-induced nematic superconductivity in a topological superconductor candidate SrBiSe. *Nature Communications*, **2019**, 10, 2802	17.4	13
49	Tunable interlayer magnetism and band topology in van der Waals heterostructures of MnBi2Te4-family materials. *Physical Review B*, **2020**, 102,	3.3	13
48	Bulk and surface electronic structure of hexagonal structured PtBi2 studied by angle-resolved photoemission spectroscopy. *Physical Review B*, **2016**, 94,	3.3	12
47	Robust Dirac point in honeycomb-structure nanoribbons with zigzag edges. *Physical Review B*, **2010**, 81,	3.3	12
46	Large Zeeman splitting induced anomalous Hall effect in ZrTe5. *Npj Quantum Materials*, **2020**, 5,	5	11
45	Electronic structure of YFe2Ge2 studied by angle-resolved photoemission spectroscopy. *Physical Review B*, **2016**, 93,	3.3	11
44	Competition between Kondo and RKKY exchange couplings in Pu1−xAmx alloys: Density functional theory with static Hartree-Fock and dynamic Hubbard-I approximations. *Physical Review B*, **2008**, 78,	3.3	11
43	Temperature effect on lattice and electronic structures of WTe2 from first-principles study. *Journal of Applied Physics*, **2017**, 121, 045104	2.5	10
42	Short range magnetic exchange interaction favors ferroelectricity. *Scientific Reports*, **2016**, 6, 22743	4.9	10
41	Photoresponsivity of an all-semimetal heterostructure based on graphene and WTe. *Scientific Reports*, **2018**, 8, 12840	4.9	10
40	Antiferromagnetic Kondo lattice in the layered compound CePd1−xBi2 and comparison to the superconductor LaPd1−xBi2. *Physical Review B*, **2015**, 92,	3.3	10
39	Anomalous properties in the normal and superconducting states of LaRu3Si2. *Physical Review B*, **2011**, 84,	3.3	10
38	Magneto-transport and Shubnikov-de Haas oscillations in the layered ternary telluride topological semimetal candidate Ta3SiTe6. *Applied Physics Letters*, **2020**, 116, 092402	3.4	9
37	Magnetic ordering induced giant optical property change in tetragonal BiFeO3. *Scientific Reports*, **2015**, 5, 17993	4.9	9
36	Simultaneous metal-insulator and antiferromagnetic transitions in orthorhombic perovskite iridate Sr0.94Ir0.78O2.68 single crystals. *Physical Review B*, **2016**, 93,	3.3	8
35	NaIrCl: Spin-Orbital-Induced Semiconductor Showing Hydration-Dependent Structural and Magnetic Variations. *Inorganic Chemistry*, **2018**, 57, 13252-13258	5.1	8
34	Calculated magnetic exchange interactions in the Dirac magnon material Cu3TeO6. *Physical Review B*, **2019**, 99,	3.3	7
33	Exhaustive list of topological hourglass band crossings in 230 space groups. *Physical Review B*, **2020**, 102,	3.3	6

32	Pentavalent iridium pyrochlore Cd2Ir2O7: A prototype material system for competing crystalline field and spin-orbit coupling. *Physical Review B*, **2018**, 97,	3.3	6
31	La(1-x)Bi(1+x)S3 (x □0.08): An n-Type Semiconductor. *Inorganic Chemistry*, **2016**, 55, 3547-52	5.1	6
30	Colossal Terahertz Photoresponse at Room Temperature: A Signature of Type-II Dirac Fermiology. *ACS Nano*, **2021**, 15, 5138-5146	16.7	6
29	Quantum criticality of the excitonic insulating transition in the nodal-line semimetal ZrSiS. *Physical Review B*, **2020**, 101,	3.3	5
28	First-principles study of the giant magnetic anisotropy energy in bulk Na4IrO4. *Physical Review B*, **2017**, 96,	3.3	5
27	Magnetic ground state and electron-doping tuning of Curie temperature in Fe3GeTe2: First-principles studies. *Physical Review B*, **2021**, 103,	3.3	5
26	Honeycomb lattice Na2IrO3 at high pressures: A robust spin-orbit Mott insulator. *Physical Review B*, **2018**, 98,	3.3	5
25	Temperature, doping, and polarization effects on Bi 6p and S 3p states in the BiS2-layered superconductor LaO1□FxBiS2. *Physical Review B*, **2016**, 94,	3.3	4
24	Tailoring Kinetics on a Topological Insulator Surface by Defect-Induced Strain: Pb Mobility on Bi2Te3. *Nano Letters*, **2016**, 16, 4454-61	11.5	4
23	Orbital ordering and fluctuations in a kagome superconductor CsV3Sb5. *Science China: Physics, Mechanics and Astronomy*, **2022**, 65, 1	3.6	4
22	Room-Temperature Anisotropic Plasma Mirror and Polarization-Controlled Optical Switch Based on Type-II Weyl Semimetal WP2. *Physical Review Applied*, **2020**, 13,	4.3	3
21	Theoretical Study on Ferrimagnetism of New Material Sr8CaRe3Cu4O24. *Journal of the Physical Society of Japan*, **2005**, 74, 98-102	1.5	3
20	Temperature-sensitive spatial distribution of defects in PdSe2 flakes. *Physical Review Materials*, **2021**, 5,	3.2	3
19	Quantum Electronics: Evidence of Both Surface and Bulk Dirac Bands and Anisotropic Nonsaturating Magnetoresistance in ZrSiS (Adv. Electron. Mater. 10/2016). *Advanced Electronic Materials*, **2016**, 2,	6.4	3
18	Spin-orbit coupling driven insulating state in hexagonal iridates Sr3MIrO6 (M=Sr,Na,Li). *Physical Review B*, **2018**, 98,	3.3	3
17	Exhaustive construction of effective models in 1651 magnetic space groups. *Physical Review B*, **2021**, 104,	3.3	3
16	Designing light-element materials with large effective spin-orbit coupling.. *Nature Communications*, **2022**, 13, 919	17.4	3
15	Effective models for nearly ideal Dirac semimetals. *Frontiers of Physics*, **2019**, 14, 1	3.7	2

14	Electronic properties of the metallic zigzag single-walled carbon nanotube ropes. *Physica Status Solidi (B): Basic Research*, **2003**, 239, 152-157	1.3	2
13	Plasmonic evolution of atomically size-selected Au clusters by electron energy loss spectrum.. *National Science Review*, **2021**, 8, nwaa282	10.8	2
12	Emergence of Van Hove singularity and topological states in Pb3Bi/Ge(111) Rashba systems. *Physical Review B*, **2020**, 102,	3.3	2
11	Topological Insulator-to-Weyl Semimetal Transition in Strongly Correlated Actinide System UNiSn. *Physical Review X*, **2019**, 9,	9.1	2
10	Observations of nodal lines in the topological semimetal ZrSnTe. *Science China: Physics, Mechanics and Astronomy*, **2020**, 63, 1	3.6	2
9	XFe4Ge2(X=Y,Lu) and Mn3Pt: Filling-enforced magnetic topological metals. *Physical Review B*, **2020**, 101,	3.3	1
8	Enormous electron-electron scattering in the filled-cage cubic compound Ba10Ti24Bi39. *Physical Review Materials*, **2019**, 3,	3.2	1
7	Renormalized quasiparticles, topological monopoles, and superconducting line nodes in heavy-fermion CeTX3 compounds. *Physical Review B*, **2021**, 103,	3.3	1
6	Symmetry-enforced band nodes in 230 space groups. *Physical Review B*, **2021**, 104,	3.3	1
5	Systematic identification of mirror-protected topological crystalline insulators by first-principles calculations. *New Journal of Physics*, **2021**, 23, 103032	2.9	0
4	Self-Assembly of Isostatic Self-Dual Colloidal Crystals. *Physical Review Letters*, **2021**, 127, 018001	7.4	0
3	EFFECTS OF REORTHOGONALIZATION: USING RECURSION METHOD IN SOME FINITE SYSTEMS. *Modern Physics Letters B*, **2004**, 18, 143-148	1.6	
2	First-Principles Calculations on the Elastic, Electronic, and Phononic Properties of Sc2Al2C3. *Physica Status Solidi (B): Basic Research*,2100336	1.3	
1	Porous hydrogen substituted graphyne as a promising anode for lithium-ion batteries.. *RSC Advances*, **2021**, 11, 22079-22087	3.7	