Jian Sun

List of Publications by Year
in descending order

124	4,538	87888	114465
papers	citations	38 h-index	63 g-index

127	127	127	5024
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Superionic Silica-Water and Silica-Hydrogen Compounds in the Deep Interiors of Uranus and Neptune. Physical Review Letters, 2022, 128, 035702.	7.8	19
2	Route to a novel tetragonal carbon allotrope via T-carbon. Diamond and Related Materials, 2022, , 108895.	3.9	0
3	Fermi Level Pinning Dependent 2D Semiconductor Devices: Challenges and Prospects. Advanced Materials, 2022, 34, e2108425.	21.0	80
4	High Energy Density Polymeric Nitrogen Nanotubes inside Carbon Nanotubes. Chinese Physics Letters, 2022, 39, 036101.	3.3	8
5	Reconfigurable Quasiâ€Nonvolatile Memory/Subthermionic FET Functions in Ferroelectricâ€“2D Semiconductor vdW Architectures. Advanced Materials, 2022, 34, e2200032.	21.0	18
6	Comprehensive Modulation of Conductance Anisotropy in Low-Symmetry <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:msub><mml:mrow><mml:mi>Re</mml:mi><mml:mi mathvariant="normal">S</mml:mi></mml:mrow><mml:mn>2</mml:mn></mml:msub></mml:math> Transistors. Physical Review Applied, 2022, 17, .	3.8	2
7	High-energy-density metal nitrides with armchair chains. Matter and Radiation at Extremes, 2022, 7, .	3.9	10
8	Temperature-induced electride transition in dense lithium. Physical Review B, 2022, 105, .	3.2	4
9	High-energy-density pentazolate salts: CaN10 and BaN10. Science China: Physics, Mechanics and Astronomy, 2021, 64, 1.	5.1	19
10	Electronically Driven 1D Cooperative Diffusion in a Simple Cubic Crystal. Physical Review X, 2021, 11, .	8.9	12
11	Mixed Coordination Silica at Megabar Pressure. Physical Review Letters, 2021, 126, 035701.	7.8	20
12	Double quantum dot-like transport in controllably doped graphene nanoribbon. Applied Physics Letters, 2021, 118, .	3.3	2
13	Tungsten Hexanitride with Single-Bonded Armchairlike Hexazine Structure at High Pressure. Physical Review Letters, 2021, 126, 065702.	7.8	52
14	Isotropic all-electric spin analyzer based on a quantum ring with spinâ€“orbit couplings. Applied Physics Letters, 2021, 118, .	3.3	1
15	Filamentary superconductivity in wrinkled PtSe2. Journal Physics D: Applied Physics, 2021, 54, 215302.	2.8	1
16	Topological insulators in the NaCaBi family with large spin-orbit coupling gaps. Physical Review Research, 2021, 3, .	3.6	7
17	Negative linear compressibility and unusual dynamic behavior of NaB3. Physical Review Materials, 2021, 5, .	2.4	1
18	Modulated Anisotropic Growth of 2D SnSe Based on the Difference in a/b/c-Axis Edge Atomic Structures. Chemistry of Materials, 2021, 33, 4231-4239.	6.7	8

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19	Currentâ€Induced Complementary Doping to Graphene from Hydrogen Silsesquioxane Passivation Layer. Physica Status Solidi - Rapid Research Letters, 2021, 15, 2100151.	2.4	1
20	High performance WSe2 p-MOSFET with intrinsic n-channel based on back-to-back pâ€“n junctions. Applied Physics Letters, 2021, 118, .	3.3	26
21	Magnetic sensors-A review and recent technologies. Engineering Research Express, 2021, 3, 022005.	1.6	95
22	Formation of copper boride on Cu(111). Fundamental Research, 2021, 1, 482-487.	3.3	15
23	Enhancing crystal structure prediction by decomposition and evolution schemes based on graph theory. Fundamental Research, 2021, 1, 466-471.	3.3	23
24	Pressure-induced structural and electronic transitions in InTeI. Physical Review B, 2021, 104, .	3.2	3
25	Epitaxial Growth of Singleâ€Phase 1T'â€WSe₂ Monolayer with Assistance of Enhanced Interface Interaction. Advanced Materials, 2021, 33, e2004930.	21.0	28
26	Controlling Carrier Transport in Vertical MoTe₂/MoS₂ van der Waals Heterostructures. ACS Applied Materials & Interfaces, 2021, 13, 54294-54300.	8.0	7
27	Icosahedral silicon boride: A potential hybrid photovoltaic-thermoelectric for energy harvesting. Physical Review Materials, 2021, 5, .	2.4	4
28	Proton-assisted growth of ultra-flat graphene films. Nature, 2020, 577, 204-208.	27.8	111
29	Ferromagnetic Semiconducting VI₃ Single-Chain Nanowire. Journal of Physical Chemistry C, 2020, 124, 2096-2103.	3.1	7
30	Determining dimensionalities and multiplicities of crystal nets. Npj Computational Materials, 2020, 6, .	8.7	8
31	Spin filtering in germanium/silicon core/shell nanowires with pseudo-helical gap. Applied Physics Letters, 2020, 117, .	3.3	3
32	Charge Density Depinning in Defective MoTe₂ Transistor by Oxygen Intercalation. Advanced Functional Materials, 2020, 30, 2004880.	14.9	20
33	Electron-phonon coupling and superconductivity in the doped topological crystalline insulator (Pb0.5Sn0.5)1â^'xInxTe. Physical Review B, 2020, 102, .	3.2	5
34	Chargeâ€“Ferroelectric Transition in Ultrathin Na_{0.5}Bi_{4.5}Ti₄O₁₅ Flakes Probed via a Dualâ€Gated Full van der Waals Transistor. Advanced Materials, 2020, 32, e2004813.	21.0	28
35	Directly Probing Effective-Mass Anisotropy of Two-Dimensional <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:msub><mml:mrow><mml:mi>Re</mml:mi><mml:mi>Se</mml:mi></mml:mrow><mml:mn>2</mml:mn></mml:msub></mml:math> in Schottky Tunnel Transistors. Physical Review Applied, 2020, 13, .	3.8	10
36	Self-Terminated Surface Monolayer Oxidation Induced Robust Degenerate Doping in MoTe₂ for Low Contact Resistance. ACS Applied Materials & Interfaces, 2020, 12, 26586-26592.	8.0	34

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37	Asymmetric Fermi velocity induced chiral magnetotransport anisotropy in the type-II Dirac semi-metal PtSe2. Communications Physics, 2020, 3, .	5.3	8
38	Evidence for magnon-phonon coupling in the topological magnet <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Cu</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:mrow></mml:math>Sn. Physical Review B, 2020, 101, .	3.2	18
39	Coexistence of plastic and partially diffusive phases in a helium-methane compound. National Science Review, 2020, 7, 1540-1547.	9.5	33
40	Prediction of quasi-one-dimensional superconductivity in metastable two-dimensional boron. Physical Review B, 2020, 101, .	3.2	12
41	Van Hove singularity arising from Mexican-hat-shaped inverted bands in the topological insulator Sn-doped <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Bi</mml:mi><mml:mrow><mml:mn>1.1</mml:mn></mml:mrow></mml:msub><mml:mi mathvariant="normal">S</mml:mi></mml:mrow></mml:math>. Physical Review B, 2020, 101, .	3.2	11
42	Ferromagnetic MnSn Monolayer Epitaxially Grown on Silicon Substrate. Chinese Physics Letters, 2020, 37, 077502.	3.3	13
43	Pressure engineering of the Dirac fermions in quasi-one-dimensional Tl₂Mo₆Se₆. Journal of Physics Condensed Matter, 2020, 32, 215402.	1.8	5
44	Plastic and Superionic Helium Ammonia Compounds under High Pressure and High Temperature. Physical Review X, 2020, 10, .	8.9	28
45	Tunable electronic structure of two-dimensional transition metal chalcogenides for optoelectronic applications. Nanophotonics, 2020, 9, 1675-1694.	6.0	44
46	Tunable large-area phase reversion in chemical vapor deposited few-layer MoTe₂ films. Journal of Materials Chemistry C, 2019, 7, 10598-10604.	5.5	14
47	Ground states of Au2Pb and pressure-enhanced superconductivity. Physical Review B, 2019, 100, .	3.2	9
48	Improve the performance of machine-learning potentials by optimizing descriptors. Journal of Chemical Physics, 2019, 150, 244110.	3.0	14
49	Multiple superionic states in heliumâ€“water compounds. Nature Physics, 2019, 15, 1065-1070.	16.7	69
50	Electrostatic force driven helium insertion into ammonia and water crystals under pressure. Communications Chemistry, 2019, 2, .	4.5	15
51	Predictions on High-Power Trivalent Metal Pentazolate Salts. Journal of Physical Chemistry Letters, 2019, 10, 6166-6173.	4.6	62
52	Predicting three-dimensional icosahedron-based boron <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi mathvariant="normal">B</mml:mi><mml:mn>60</mml:mn></mml:msub></mml:math>. Physical Review B, 2019, 99, .	3.2	21
53	Quantum oscillations on the surface of InAs epilayer. Physica E: Low-Dimensional Systems and Nanostructures, 2019, 114, 113604.	2.7	3
54	Quantum Dot Formation in Controllably Doped Graphene Nanoribbon. ACS Nano, 2019, 13, 7502-7507.	14.6	10

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55	Ambipolar MoS₂ Fieldâ€Effect Transistor by Spatially Controlled Chemical Doping. Physica Status Solidi - Rapid Research Letters, 2019, 13, 1900208.	2.4	15
56	Composite topological nodal lines penetrating the Brillouin zone in orthorhombic AgF2. Npj Computational Materials, 2019, 5, .	8.7	11
57	The influence of tensile strain on water adsorbed on Fe (100) surface: Surface chemistry aspect of stress corrosion cracking. Applied Surface Science, 2019, 481, 192-199.	6.1	7
58	Growth and Thermo-driven Crystalline Phase Transition of Metastable Monolayer 1Tâ€²-WSe2 Thin Film. Scientific Reports, 2019, 9, 2685.	3.3	19
59	Robust double Weyl semimetal phase in a nonmagnetic hexagonal lattice system. Physical Review B, 2019, 99, .	3.2	3
60	Pressure-Stabilized High-Energy-Density Alkaline-Earth-Metal Pentazolate Salts. Journal of Physical Chemistry C, 2019, 123, 10205-10211.	3.1	69
61	Superconducting Single-Layer T-Graphene and Novel Synthesis Routes*. Chinese Physics Letters, 2019, 36, 097401.	3.3	61
62	Experimental evidence of crystal symmetry protection for the topological nodal line semimetal state in ZrSiS. Physical Review B, 2019, 100, .	3.2	19
63	Gate Tunable Hole Charge Qubit Formed in a Ge/Si Nanowire Double Quantum Dot Coupled to Microwave Photons. Nano Letters, 2019, 19, 1052-1060.	9.1	20
64	Prediction of pressure-induced stabilization of noble-gas-atom compounds with alkali oxides and alkali sulfides. Physical Review Materials, 2019, 3, .	2.4	20
65	High-pressure phases of Weyl semimetals NbP, NbAs, TaP, and TaAs. Science China: Physics, Mechanics and Astronomy, 2018, 61, 1.	5.1	16
66	Unveiling the charge density wave inhomogeneity and pseudogap state in 1 T -TiSe 2. Science Bulletin, 2018, 63, 426-432.	9.0	17
67	Nonsymmorphic symmetry protected node-line semimetal in the trigonal YH3. Scientific Reports, 2018, 8, 1467.	3.3	12
68	Pressure-induced structural and electronic transitions in bismuth iodide. Physical Review B, 2018, 98, .	3.2	15
69	Electrically tunable localized states in sub-band of bilayer graphene nanoribbon. Applied Physics Letters, 2018, 113, .	3.3	4
70	Anharmonic effect driven topological phase transition in PbO2 predicted by first-principles calculations. Physical Review B, 2018, 98, .	3.2	7
71	Helical Hole State in Multiple Conduction Modes in Ge/Si Core/Shell Nanowire. Nano Letters, 2018, 18, 6144-6149.	9.1	19
72	A novel superhard tungsten nitride predicted by machine-learning accelerated crystal structure search. Science Bulletin, 2018, 63, 817-824.	9.0	102

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73	Evidence for a Dirac nodal-line semimetal in SrAs3. Science Bulletin, 2018, 63, 535-541.	9.0	34
74	Unusual phonon density of states and response to the superconducting transition in the In-doped topological crystalline insulator <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Pb</mml:mi><mml:mrow><mml:mn>0.5</m Physical Review B, 2018, 97, .	3.2	10
75	Pressure-induced multiband superconductivity in pyrite <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>PtB</mml:mi><mml:msub><mml:mi mathvariant="normal">i</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math> with perfect electron-hole compensation. Physical Review Materials, 2018, 2, .	2.4	9
76	Structural evolution behavior of manganese monophosphide under high pressure: experimental and theoretical study. Journal of Physics Condensed Matter, 2017, 29, 254002.	1.8	4
77	Pressure-induced metallization and superconducting phase in ReS 2. Npj Quantum Materials, 2017, 2, .	5.2	53
78	Silicon clathrates for photovoltaics predicted by a two-step crystal structure search. Applied Physics Letters, 2017, 111, 173904.	3.3	11
79	Topological Dirac line nodes and superconductivity coexist in SnSe at high pressure. Physical Review B, 2017, 96, .	3.2	35
80	Pressure-induced anomalous enhancement of insulating state and isosymmetric structural transition in quasi-one-dimensional <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>Ti</mml:mi><mml:msub><mml:mi mathvariant="normal">S</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:mrow></mml:math>. Physical Review B, 2017, 96, .	3.2	12
81	Strain-induced quantum topological phase transitions in Na3Bi. Physical Review B, 2017, 96, .	3.2	37
82	High-temperature superconducting phase of HBr under pressure predicted by first-principles calculations. Physical Review B, 2017, 96, .	3.2	8
83	Concurrence of superconductivity and structure transition in Weyl semimetal TaP under pressure. Npj Quantum Materials, 2017, 2, .	5.2	47
84	Superhard and superconducting B6C. Materials Today Physics, 2017, 3, 76-84.	6.0	13
85	Ground state structure of high-energy-density polymeric carbon monoxide. Physical Review B, 2017, 95, .	3.2	22
86	Direct visualization of a two-dimensional topological insulator in the single-layer<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">e</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math>. Physical Review B, 2017, 96, .	3.2	129
87	Pressure Induced Enhancement of Superconductivity in LaRu2P2. Scientific Reports, 2016, 6, 24479.	3.3	8
88	Origin of superconductivity in the Weyl semimetal <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>WT</mml:mi><mml:msub><mml:mi mathvariant="normal">e</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math> under pressure. Physical Review B, 2016, 94, .	3.2	91
89	Pressure-Induced New Topological Weyl Semimetal Phase in TaAs. Physical Review Letters, 2016, 117, 146402.	7.8	66
90	Phonon density of states of single-crystal<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>SrF</mml:mi><mml:msub><mml:mi mathvariant="normal">e</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:mi mathvariant="normal">A</mml:mi><mml:msub><mml:mi mathvariant="normal">s</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math>across the collapsed phase transition at high pressure. Physical Review B, 2016, 94, .	3.2	7

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91	Nanocrystalline tin oxide: Possible origin of its weak ferromagnetism deduced from nuclear magnetic resonance and X-ray photoelectron spectroscopies. Physics Letters, Section A: General, Atomic and Solid State Physics, 2016, 380, 3138-3143.	2.1	6
92	Pressure-induced superconductivity in a three-dimensional topological material ZrTe ₅. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 2904-2909.	7.1	124
93	Novel electronic and phonon-related properties of the newly discovered silicide superconductor Li 2 IrSi 3. Europhysics Letters, 2015, 110, 17003.	2.0	16
94	Solvation shell resolved THz spectra of simple aqua ions â€“ distinct distance- and frequency-dependent contributions of solvation shells. Physical Chemistry Chemical Physics, 2015, 17, 8323-8329.	2.8	45
95	Solvothermal Synthesis of Lateral Heterojunction Sb₂Te₃/Bi₂Te₃ Nanoplates. Nano Letters, 2015, 15, 5905-5911.	9.1	56
96	Novel structural phases and superconductivity of iridium telluride under high pressures. Scientific Reports, 2014, 4, 6433.	3.3	11
97	Direct Band Gap Silicon Allotropes. Journal of the American Chemical Society, 2014, 136, 9826-9829.	13.7	151
98	Understanding THz Spectra of Aqueous Solutions: Glycine in Light and Heavy Water. Journal of the American Chemical Society, 2014, 136, 5031-5038.	13.7	88
99	Stable All-Nitrogen Metallic Salt at Terapascal Pressures. Physical Review Letters, 2013, 111, 175502.	7.8	62
100	Persistence and Eventual Demise of Oxygen Molecules at Terapascal Pressures. Physical Review Letters, 2012, 108, 045503.	7.8	55
101	Understanding the Origins of Dipolar Couplings and Correlated Motion in the Vibrational Spectrum of Water. Journal of Physical Chemistry Letters, 2012, 3, 2135-2140.	4.6	41
102	Controlling the Bonding and Band Gaps of Solid Carbon Monoxide with Pressure. Physical Review Letters, 2011, 106, 145502.	7.8	60
103	YaoetÂal.Reply:. Physical Review Letters, 2010, 104, .	7.8	0
104	Dissecting the THz spectrum of liquid water from first principles via correlations in time and space. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 12068-12073.	7.1	374
105	Glycine in aqueous solution: solvation shells, interfacial water, and vibrational spectroscopy from ab initio molecular dynamics. Journal of Chemical Physics, 2010, 133, 114508.	3.0	61
106	A tetragonal phase of superhard BC2N. Journal of Applied Physics, 2009, 105, .	2.5	32
107	Structural Prediction and Phase Transformation Mechanisms in Calcium at High Pressure. Physical Review Letters, 2009, 103, 055503.	7.8	65
108	Comment on â€œNew Metallic Carbon Crystalâ€• Physical Review Letters, 2009, 102, 229601.	7.8	55

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109	High-pressure polymeric phases of carbon dioxide. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 6077-6081.	7.1	104
110	High-pressure structures and vibrational spectra of barium fluoride: Results obtained under nearly hydrostatic conditions. Physical Review B, 2009, 79, .	3.2	13
111	Structural transformations in carbon under extreme pressure: Beyond diamond. Journal of Chemical Physics, 2009, 130, 194512.	3.0	56
112	Structures and superconducting properties of the high-pressure IV and V phases of calcium from first principles. Physical Review B, 2008, 78, .	3.2	33
113	Theoretical hardness of the cubic BC2N. Diamond and Related Materials, 2007, 16, 526-530.	3.9	36
114	Most likely phase of superhard<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mi>BC</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:mi mathvariant="normal">N</mml:mi></mml:mrow></mml:math>byab initiocalculations. Physical Review B, 2007, 76, .	3.2	62
115	Bond ionicities and hardness ofB13C2-like structuredByXcrystals(X=C,N,O,P,As). Physical Review B, 2006, 73, .	3.2	42
116	Infrared and Raman spectra ofÎ²â^'BC2Nfrom first principles calculations. Physical Review B, 2006, 74, .	3.2	17
117	Chalcopyrite polymorph for superhard BC2N. Applied Physics Letters, 2006, 89, 151911.	3.3	41
118	First-principles study of electronic structure and optical properties of heterodiamondBC2N. Physical Review B, 2006, 73, .	3.2	113
119	Ab initioinvestigations of optical properties of the high-pressure phases of ZnO. Physical Review B, 2005, 71, .	3.2	363
120	Optical properties of heterodiamond B2CN using first-principles calculations. Applied Physics Letters, 2004, 84, 4544-4546.	3.3	78
121	High efficiency single- and dual-wavelength Ndâ€‰:â€‰GdVO4 lasers pumped by a fiber-coupled diode. Applied Physics B: Lasers and Optics, 2004, 79, 301-304.	2.2	54
122	Conical Second Harmonic Generation in a Two-DimensionalÏ‡(2)Photonic Crystal: A Hexagonally PoledLiTaO3Crystal. Physical Review Letters, 2004, 93, 133904.	7.8	108
123	Pressure-induced phase transitions in the ZrXY (X= Si, Ge, Sn; Y= S, Se, Te) family compounds. Chinese Physics B, 0, , .	1.4	0
124	Partially Diffusive Helium-Silica Compound under High Pressure. Chinese Physics Letters, 0, , .	3.3	3