Jia-wang Hong

List of Publications by Year
in descending order

114 papers	5,939 citations	101543 36 h-index	76900 74 g-index
116 all docs	116 docs citations	116 times ranked	8146 citing authors

#	Article	IF	Citations
1	Cation and anion immobilization through chemical bonding enhancement with fluorides for stable halide perovskite solar cells. Nature Energy, 2019, 4, 408-415.	39.5	831
2	Orbitally driven giant phonon anharmonicity inÂSnSe. Nature Physics, 2015, 11, 1063-1069.	16.7	539
3	Anomalously low electronic thermal conductivity in metallic vanadium dioxide. Science, 2017, 355, 371-374.	12.6	307
4	Metallization of vanadium dioxide driven by large phonon entropy. Nature, 2014, 515, 535-539.	27.8	252
5	Liquid medium annealing for fabricating durable perovskite solar cells with improved reproducibility. Science, 2021, 373, 561-567.	12.6	227
6	Analysis of nonlinear vibration for embedded carbon nanotubes. Journal of Sound and Vibration, 2006, 296, 746-756.	3.9	192
7	Manipulation of facet orientation in hybrid perovskite polycrystalline films by cation cascade. Nature Communications, 2018, 9, 2793.	12.8	189
8	First-principles theory and calculation of flexoelectricity. Physical Review B, 2013, 88, .	3.2	179
9	Spin-phonon coupling effects in transition-metal perovskites: A DFTÂ+Â<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>U</mml:mi></mml:math>and hybrid-functional study. Physical Review B, 2012, 85, .	3.2	145
10	An in situ cross-linked 1D/3D perovskite heterostructure improves the stability of hybrid perovskite solar cells for over 3000 h operation. Energy and Environmental Science, 2020, 13, 4344-4352.	30.8	142
11	First-principles theory of frozen-ion flexoelectricity. Physical Review B, 2011, 84, .	3.2	135
12	The flexoelectricity of barium and strontium titanates from first principles. Journal of Physics Condensed Matter, 2010, 22, 112201.	1.8	130
13	Size-dependent ferroelectric behaviors of BaTiO3 nanowires. Applied Physics Letters, 2008, 92, .	3.3	111
14	Transport Properties and High Thermopower of SnSe₂: A Full Ab-Initio Investigation. Journal of Physical Chemistry C, 2017, 121, 225-236.	3.1	103
15	Large Flexoelectric Anisotropy in Paraelectric Barium Titanate. Physical Review Letters, 2015, 115, 037601.	7.8	102
16	A Thermodynamically Favored Crystal Orientation in Mixed Formamidinium/Methylammonium Perovskite for Efficient Solar Cells. Advanced Materials, 2019, 31, e1900390.	21.0	101
17	Ferroelectric domain wall memory with embedded selector realized in LiNbO3 single crystals integrated on Si wafers. Nature Materials, 2020, 19, 1188-1194.	27.5	92
18	Phonon anharmonicity and negative thermal expansion in SnSe. Physical Review B, 2016, 94, .	3.2	90

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19	The Spacer Cations Interplay for Efficient and Stable Layered 2D Perovskite Solar Cells. Advanced Energy Materials, 2020, 10, 1901566.	19.5	89
20	Strain effect on ferroelectric behaviors of BaTiO₃nanowires: a molecular dynamics study. Nanotechnology, 2010, 21, 015701.	2.6	83
21	Elastic and electrical anomalies at low-temperature phase transitions in BiFeO₃. Journal of Physics Condensed Matter, 2008, 20, 452205.	1.8	78
22	Layered Halide Double Perovskites Cs_{3+n}M(II)_nSb₂X_{9+3n} (M = Sn,) Tj ETQq1 0 0 rgBT /Overlock	4.6	77
23	Topology of the polarization field in ferroelectric nanowires from first principles. Physical Review B, 2010, 81, .	3.2	73
24	Modulating the Electrical Transport in the Two-Dimensional Electron Gas at <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>LaAlO</mml:mi></mml:mrow><mml:mrow><mml:mn>3</mml:mn> Heterostructures by Interfacial Flexoelectricity. Physical Review Letters, 2019, 122, 257601.	7.8	72
25	Sandwiched electrode buffer for efficient and stable perovskite solar cells with dual back surface fields. Joule, 2021, 5, 2148-2163.	24.0	63
26	Manipulation of current rectification in van der Waals ferroionic CuInP2S6. Nature Communications, 2022, 13, 574.	12.8	60
27	X-Ray Detector Based on All-Inorganic Lead-Free Cs₂AgBiBr₆ Perovskite Single Crystal. IEEE Transactions on Electron Devices, 2019, 66, 2224-2229.	3.0	57
28	Thicknessâ€Dependent Inâ€Plane Polarization and Structural Phase Transition in van der Waals Ferroelectric CuInP₂S₆. Small, 2020, 16, e1904529.	10.0	50
29	Band-Edge Orbital Engineering of Perovskite Semiconductors for Optoelectronic Applications. Journal of Physical Chemistry Letters, 2021, 12, 4227-4239.	4.6	50
30	Revealing the role of thiocyanate anion in layered hybrid halide perovskite (CH3NH3)2Pb(SCN)2I2. Journal of Chemical Physics, 2017, 146, 224702.	3.0	49
31	Charge transfer drives anomalous phase transition in ceria. Nature Communications, 2018, 9, 5063.	12.8	48
32	Fracture patterns and the energy release rate of phosphorene. Nanoscale, 2016, 8, 5728-5736.	5.6	46
33	Phase transition and anharmonicity in SnSe. Materials Today Physics, 2019, 10, 100093.	6.0	45
34	Strain Modulation for Lightâ€Stable nâ€“iâ€“p Perovskite/Silicon Tandem Solar Cells. Advanced Materials, 2022, 34, e2201315.	21.0	45
35	Encapsulated X-Ray Detector Enabled by All-Inorganic Lead-Free Perovskite Film With High Sensitivity and Low Detection Limit. IEEE Transactions on Electron Devices, 2020, 67, 3191-3198.	3.0	40
36	Twin Crystal Induced near Zero Thermal Expansion in SnO₂ Nanowires. Journal of the American Chemical Society, 2018, 140, 7403-7406.	13.7	37

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37	Molecular dynamics investigations on the size-dependent ferroelectric behavior of BaTiO₃nanowires. Nanotechnology, 2009, 20, 405703.	2.6	36
38	Structural, spectroscopic, magnetic and electrical characterization of Ca-doped polycrystalline bismuth ferrite, Bi_{1â^'x}Ca_xFeO_{3â^'x/2}(xâ‰ˆ) Tj ETQq0 0 0 rgBT /Over	3.6	36
39	Systematic study of the ferroelectric properties of Pb(Zr0.5Ti0.5)O3 nanowires. Journal of Applied Physics, 2008, 104, .	2.5	34
40	Mechanical Properties of Formamidinium Halide Perovskites FABX₃ (FA=CH(NH₂)₂; B=Pb, Sn; X=Br, I) by First-Principles Calculations[*]. Chinese Physics Letters, 2019, 36, 056201.	3.3	33
41	Improper molecular ferroelectrics with simultaneous ultrahigh pyroelectricity and figures of merit. Science Advances, 2021, 7, .	10.3	32
42	Enhanced piezo-response in copper halide perovskites based PVDF composite films. Science Bulletin, 2018, 63, 1254-1259.	9.0	31
43	Half-metallicity in two-dimensional Co ₂ Se ₃ monolayer with superior mechanical flexibility. 2D Materials, 2018, 5, 045026.	4.4	29
44	Flexoelectricity induced increase of critical thickness in epitaxial ferroelectric thin films. Physica B: Condensed Matter, 2012, 407, 3377-3381.	2.7	27
45	New cryogenic phase transitions in SrSnO₃. Journal of Physics Condensed Matter, 2010, 22, 095901.	1.8	26
46	Phonon anharmonicity: a pertinent review of recent progress and perspective. Science China: Physics, Mechanics and Astronomy, 2021, 64, 1.	5.1	26
47	Mapping the energy surface of PbTiO3in multidimensional electric-displacement space. Physical Review B, 2011, 84, .	3.2	25
48	Designing Two-Dimensional Properties in Three-Dimensional Halide Perovskites via Orbital Engineering. Journal of Physical Chemistry Letters, 2019, 10, 6688-6694.	4.6	25
49	Synergistically Optimizing Carrier Concentration and Decreasing Sound Velocity in n-type AgInSe₂ Thermoelectrics. Chemistry of Materials, 2019, 31, 8182-8190.	6.7	23
50	Emergent multiferroism with magnetodielectric coupling in EuTiO3 created by a negative pressure control of strong spin-phonon coupling. Nature Communications, 2022, 13, 2364.	12.8	23
51	Anomalously Suppressed Thermal Conduction by Electronâ€Phonon Coupling in Chargeâ€Densityâ€Wave Tantalum Disulfide. Advanced Science, 2020, 7, 1902071.	11.2	22
52	Built-In Electric Field Hindering Photogenerated Carrier Recombination in Polar Bilayer SnO/BiOX (X =) Tj ETQq0 0 0 rgBT /Overlock 10 Tf	3.1	22
53	Abnormality in fracture strength of polycrystalline silicene. 2D Materials, 2016, 3, 035008.	4.4	21
54	Extreme In-Plane Thermal Conductivity Anisotropy in Titanium Trisulfide Caused by Heat-Carrying Optical Phonons. Nano Letters, 2020, 20, 5221-5227.	9.1	21

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55	Physical insights on the low lattice thermal conductivity of AgInSe2. Materials Today Physics, 2021, 19, 100428.	6.0	20
56	Analytical method to determine flexoelectric coupling coefficient at nanoscale. Applied Physics Letters, 2016, 108, .	3.3	19
57	Structural stability and optoelectronic properties of tetragonal MAPbI₃ under strain. Nanotechnology, 2020, 31, 225204.	2.6	19
58	Advances in Developing Electromechanically Coupled Computational Methods for Piezoelectrics/Ferroelectrics at Multiscale. Applied Mechanics Reviews, 2013, 65, .	10.1	17
59	Local stress enhanced photocurrent of visible light photo-detection in Cs2AgBiBr6 single crystal. Applied Physics Letters, 2019, 115, .	3.3	17
60	Atomic reconfiguration among tri-state transition at ferroelectric/antiferroelectric phase boundaries in Pb(Zr,Ti)O3. Nature Communications, 2022, 13, 1390.	12.8	17
61	Electrically driven octahedral rotations in SrTiO3and PbTiO3. Physical Review B, 2013, 87, .	3.2	16
62	Mechanically Tunable Near-Field Radiative Heat Transfer between Monolayer Black Phosphorus Sheets. Langmuir, 2020, 36, 12038-12044.	3.5	16
63	Domain evolution in bended freestanding BaTiO3 ultrathin films: A phase-field simulation. Applied Physics Letters, 2020, 116, .	3.3	15
64	Unraveling the Factors Affecting the Mechanical Properties of Halide Perovskites from First-Principles Calculations. Journal of Physical Chemistry C, 2022, 126, 4715-4725.	3.1	15
65	Frustrated Magnetism in Mott Insulating <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mo stretchy="false">(</mml:mo><mml:msub><mml:mrow><mml:mi) Tj ETQq1 1 0.784314 rgBT /Overlock 10 Tf 50 342 Td (mathvariant="... 2019, 9, .	8.9	14
66	Anomalous lattice thermal conductivity in layered MNCl (M = Zr, Hf) materials driven by lanthanide contraction. Journal of Materials Chemistry A, 2020, 8, 3128-3134.	10.3	14
67	Data-driven computational prediction and experimental realization of exotic perovskite-related polar magnets. Npj Quantum Materials, 2020, 5, .	5.2	14
68	Pressure effect on Kohn anomaly and electronic topological transition in single-crystal tantalum. Physical Review B, 2019, 100, .	3.2	13
69	Coexistence of Magnetism and Ferroelectricity in 3d Transition-Metal-Doped SnTe Monolayer. Journal of Physical Chemistry C, 2019, 123, 28919-28924.	3.1	12
70	Direct tuning of the band gap via electronically-active organic cations and large piezoelectric response in one-dimensional hybrid halides from first-principles. Journal of Materials Chemistry C, 2018, 6, 7671-7676.	5.5	11
71	Low-temperature anharmonicity and the thermal conductivity of cesium iodide. Physical Review B, 2019, 99, .	3.2	11
72	Atomically Asymmetric Inversion Scales up to Mesoscopic Single-Crystal Monolayer Flakes. ACS Nano, 2020, 14, 13834-13840.	14.6	11

#	Article	IF	Citations
73	Selfâ€Assembled Epitaxial Ferroelectric Oxide Nanospring with Superâ€Scalability. Advanced Materials, 2022, 34, e2108419.	21.0	11
74	Amidinium additives for high-performance perovskite solar cells. Journal of Materials Chemistry A, 2022, 10, 3506-3512.	10.3	11
75	Anomalous suppressed thermal conductivity in CuInTe2 under pressure. Applied Physics Letters, 2021, 119, .	3.3	11
76	Phonon instability and pressure-induced isostructural semiconductor-semimetal transition of monoclinic VO2. Physical Review B, 2016, 94, .	3.2	10
77	Fracture mechanisms in multilayer phosphorene assemblies: from brittle to ductile. Physical Chemistry Chemical Physics, 2017, 19, 13083-13092.	2.8	10
78	The direct observation of ferromagnetic domain of single crystal CrSiTe3. AIP Advances, 2018, 8, .	1.3	10
79	Lithium intercalation drives mechanical properties deterioration in bulk and single-layered black phosphorus: a first-principles study. 2D Materials, 2020, 7, 025028.	4.4	10
80	External uniform electric field removing the flexoelectric effect in epitaxial ferroelectric thin films. Europhysics Letters, 2012, 99, 47003.	2.0	9
81	Atomically Resolved Edge States on a Layered Ferroelectric Oxide. ACS Applied Materials & Interfaces, 2020, 12, 4150-4154.	8.0	9
82	Origin of unexpected lattice expansion and ferromagnetism in epitaxial EuTiO3â€“Î´ thin films. Ceramics International, 2020, 46, 19990-19995.	4.8	9
83	Strong influence of strain gradient on lithium diffusion: flexo-diffusion effect. Nanoscale, 2020, 12, 15175-15184.	5.6	9
84	Ultralow contents of AgNbO3 fibers induced high energy storage density in ferroelectric polymer nanocomposites. Applied Physics Letters, 2022, 120, .	3.3	9
85	A surface-layer model of ferroelectric nanowire. Journal of Applied Physics, 2010, 108, 124109.	2.5	8
86	Absence of phonon gap driven ultralow lattice thermal conductivity in half-Heusler LuNiBi. Journal of Materials Chemistry C, 2021, 9, 12420-12425.	5.5	8
87	Size-dependent strain-engineered nanostructures in MoS₂monolayer investigated by atomic force microscopy. Nanotechnology, 2021, 32, 465703.	2.6	8
88	Giant anisotropic in-plane thermal conduction induced by Anomalous phonons in pentagonal PdSe2. Materials Today Physics, 2022, 22, 100599.	6.0	8
89	Methodological Approach to the High-Pressure Synthesis of Nonmagnetic Li₂B⁴⁺Bâ€²⁶⁺O₆ Oxides. Chemistry of Materials, 2022, 34, 186-196.	6.7	8
90	Non-monotonic thickness dependence of Curie temperature and ferroelectricity in two-dimensional SnTe film. Applied Physics Letters, 2018, 113, .	3.3	7

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91	Van der Waals direction transformation induced by shear strain in layered PdSe2. Extreme Mechanics Letters, 2021, 44, 101231.	4.1	7
92	Polarization-switching pathway determined electrical transport behaviors in rhombohedral BiFeO₃ thin films. Nanoscale, 2021, 13, 17746-17753.	5.6	7
93	Screening piezoelectricity in determination of flexoelectric coefficient at nanoscale. Mechanics of Materials, 2020, 150, 103591.	3.2	6
94	Nonâ€Traditional Positivelyâ€Biased Narrowâ€Band Perovskite Singleâ€Crystal Photodetectors Enabled by Interfacial Engineering. Advanced Optical Materials, 0, , 2102225.	7.3	6
95	Asymmetric mechanical properties in ferroelectrics driven by flexo-deformation effect. Journal of the Mechanics and Physics of Solids, 2022, 164, 104891.	4.8	6
96	Strain manipulation of ferroelectric skyrmion bubbles in a freestanding <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>PbTiO</mml:mi><mml:mn>3</mml:mn></mml:msub></m film: A phase field simulation. Physical Review B, 2022, 105, .	3.2	6
97	Atomic-scale simulations for lithium dendrite growth driven by strain gradient. Applied Mathematics and Mechanics (English Edition), 2020, 41, 533-542.	3.6	5
98	Orbitalâ^'energy splitting in Ruddlesdenâ^'Popper layered halide perovskites for tunable optoelectronic properties. Journal of Power Sources, 2021, 514, 230546.	7.8	5
99	First-principles study of the structural, electronic, magnetic, and ferroelectric properties of a charge-ordered iron(ii)-iron(iii) formate framework. Journal of Chemical Physics, 2019, 151, 124704.	3.0	4
100	Visualization of large-scale charged domain Walls in hexagonal manganites. Applied Physics Letters, 2021, 118, .	3.3	4
101	Elastic Properties of Photovoltaic Single Crystal Cs2AgBiBr6. Experimental Mechanics, 2022, 62, 117-123.	2.0	4
102	Enhanced domain wall conductivity in photosensitive ferroelectrics Sn2P2S6 with full-visible-spectrum absorption. Science China Materials, 2022, 65, 1049-1056.	6.3	4
103	Size Effect of Elastic and Electromechanical Properties of BaTiO₃ Films from First-Principles Method. Integrated Ferroelectrics, 2011, 124, 79-86.	0.7	3
104	Significant phase-space-driven thermal transport suppression in BC8 silicon. Materials Today Physics, 2021, 21, 100566.	6.0	3
105	Visualization of Strain-Engineered Nanopattern in Center-Confined Mesoscopic WS₂ Monolayer Flakes. Journal of Physical Chemistry C, 2022, 126, 7184-7192.	3.1	3
106	Characterization method of flexoelectric coefficient of piezoelectrics at nanoscale. , 2017, , .		2
107	Sound velocity softening in body-centered cubic niobium under shock compression. Physical Review B, 2022, 105, .	3.2	2
108	Elastic properties of type-I clathrate K ₈ Zn ₄ Sn ₄₂ determined by inelastic X-ray scattering. Europhysics Letters, 2016, 113, 16001.	2.0	1

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109	Matryoshka phonon twinning in Î±-GaN. Communications Physics, 2021, 4, .	5.3	1
110	Kohn anomaly and elastic softening in body-centered cubic molybdenum at high pressure. Physical Review B, 2022, 105, .	3.2	1
111	Near-zero Poissonâ€™s ratio and suppressed mechanical anisotropy in strained black phosphorene/SnSe van der Waals heterostructure: a first-principles study. Applied Mathematics and Mechanics (English) Tj ETQq1 1 0.784314 rgBT /Ove	3.8	1
112	Publisher's Note: Phonon instability and pressure-induced isostructural semiconductor-semimetal transition of monoclinic <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>VO</mml:mi><mml:mn>2</mml:mn></mml:msub></mml [Phys. Rev. B 94 , 205127 (2016)]. Physical Review B, 2017, 95, .	3.2	0
113	Selfâ€Assembled Epitaxial Ferroelectric Oxide Nanospring with Superâ€Scalability (Adv. Mater. 13/2022). Advanced Materials, 2022, 34, .	21.0	0
114	Response to Comment on â€œImproper molecular ferroelectrics with simultaneous ultrahigh pyroelectricity and figures of meritâ€. Science Advances, 2022, 8, .	10.3	0