Jian He

List of Publications by Year
in descending order

129	8,114	57758	49909
papers	citations	44 h-index	87 g-index

131	131	131	7085
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Advances in thermoelectric materials research: Looking back and moving forward. Science, 2017, 357, .	12.6	1,613
2	Identifying the Specific Nanostructures Responsible for the High Thermoelectric Performance of (Bi,Sb)₂Te₃ Nanocomposites. Nano Letters, 2010, 10, 3283-3289.	9.1	484
3	High-performance half-Heusler thermoelectric materials Hf1â^'x ZrxNiSn1â^'ySby prepared by levitation melting and spark plasma sintering. Acta Materialia, 2009, 57, 2757-2764.	7.9	373
4	New Insights into Intrinsic Point Defects in V₂VI₃ Thermoelectric Materials. Advanced Science, 2016, 3, 1600004.	11.2	317
5	Thermoelectric power factor: Enhancement mechanisms and strategies for higher performance thermoelectric materials. Materials Science and Engineering Reports, 2015, 97, 1-22.	31.8	311
6	Oxide thermoelectrics: The challenges, progress, and outlook. Journal of Materials Research, 2011, 26, 1762-1772.	2.6	261
7	Flexible thermoelectrics: from silver chalcogenides to full-inorganic devices. Energy and Environmental Science, 2019, 12, 2983-2990.	30.8	188
8	Exceptional plasticity in the bulk single-crystalline van der Waals semiconductor InSe. Science, 2020, 369, 542-545.	12.6	163
9	Entropy Engineering of SnTe: Multiâ€Principalâ€Element Alloying Leading to Ultralow Lattice Thermal Conductivity and Stateâ€ofâ€theâ€Art Thermoelectric Performance. Advanced Energy Materials, 2018, 8, 1802116.	19.5	157
10	High Performance Mg₂(Si,Sn) Solid Solutions: a Point Defect Chemistry Approach to Enhancing Thermoelectric Properties. Advanced Functional Materials, 2014, 24, 3776-3781.	14.9	141
11	Attaining high mid-temperature performance in (Bi,Sb)2Te3 thermoelectric materials via synergistic optimization. NPG Asia Materials, 2016, 8, e302-e302.	7.9	119
12	Tracking the sliding of grain boundaries at the atomic scale. Science, 2022, 375, 1261-1265.	12.6	115
13	Hot deformation induced bulk nanostructuring of unidirectionally grown p-type (Bi,Sb)2Te3 thermoelectric materials. Journal of Materials Chemistry A, 2013, 1, 11589.	10.3	110
14	Monitoring pH-Triggered Drug Release from Radioluminescent Nanocapsules with X-ray Excited Optical Luminescence. ACS Nano, 2013, 7, 1178-1187.	14.6	110
15	Roles of interstitial Mg in improving thermoelectric properties of Sb-doped Mg2Si0.4Sn0.6 solid solutions. Journal of Materials Chemistry, 2012, 22, 6838.	6.7	107
16	Preferential Scattering by Interfacial Charged Defects for Enhanced Thermoelectric Performance in Few-layered n-type Bi2Te3. Scientific Reports, 2013, 3, 3212.	3.3	107
17	Towards higher thermoelectric performance of Bi2Te3 via defect engineering. Scripta Materialia, 2016, 111, 39-43.	5.2	100
18	Simultaneously optimizing the independent thermoelectric properties in (Ti,Zr,Hf)(Co,Ni)Sb alloy by in situ forming InSb nanoinclusions. Acta Materialia, 2010, 58, 4705-4713.	7.9	99

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19	High performance Bi2Te3 nanocomposites prepared by single-element-melt-spinning spark-plasma sintering. Journal of Materials Science, 2013, 48, 2745-2760.	3.7	96
20	Manipulating the Combustion Wave during Self-Propagating Synthesis for High Thermoelectric Performance of Layered Oxychalcogenide Bi_{1â€“x}Pb_xCuSeO. Chemistry of Materials, 2016, 28, 4628-4640.	6.7	88
21	Significant ZT enhancement in p-type Ti(Co,Fe)Sbâ€“InSb nanocomposites via a synergistic high-mobility electron injection, energy-filtering and boundary-scattering approach. Acta Materialia, 2013, 61, 2087-2094.	7.9	87
22	Thermopower and harvesting heat. Science, 2021, 371, 343-344.	12.6	80
23	Ga-substituted Li7La3Zr2O12: An investigation based on grain coarsening in garnet-type lithium ion conductors. Journal of Alloys and Compounds, 2017, 695, 3744-3752.	5.5	79
24	Facile room temperature solventless synthesis of high thermoelectric performance Ag₂Se via a dissociative adsorption reaction. Journal of Materials Chemistry A, 2017, 5, 23243-23251.	10.3	79
25	Bulk Hexagonal Boron Nitride with a Quasiâ€Isotropic Thermal Conductivity. Advanced Functional Materials, 2018, 28, 1707556.	14.9	78
26	Labelâ€Free and Continuousâ€Flow Ferrohydrodynamic Separation of HeLa Cells and Blood Cells in Biocompatible Ferrofluids. Advanced Functional Materials, 2016, 26, 3990-3998.	14.9	77
27	First-principles study of the electronic, optical, and lattice vibrational properties of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>AgSbTe</mml:mtext></mml:mrow><mml:mn>2</mml:mn></mml	3.2	75
	Physical Review B, 2008, 77, .		
28	Synergistic Compositionalâ€“Mechanicalâ€“Thermal Effects Leading to a Record High zT in nâ€Type V₂VI₃ Alloys Through Progressive Hot Deformation. Advanced Functional Materials, 2018, 28, 1803617.	14.9	73
29	Magnetic and optical properties of multifunctional coreâ€“shell radioluminescence nanoparticles. Journal of Materials Chemistry, 2012, 22, 12802.	6.7	71
30	Thermodynamic Routes to Ultralow Thermal Conductivity and High Thermoelectric Performance. Advanced Materials, 2020, 32, e1906457.	21.0	71
31	Conformal organicâ€“inorganic semiconductor composites for flexible thermoelectrics. Energy and Environmental Science, 2020, 13, 511-518.	30.8	67
32	Flexible, auxetic and strain-tunable two dimensional penta-X₂C family as water splitting photocatalysts with high carrier mobility. Journal of Materials Chemistry A, 2019, 7, 7791-7799.	10.3	66
33	Recent advances in inorganic material thermoelectrics. Inorganic Chemistry Frontiers, 2018, 5, 2380-2398.	6.0	63
34	Electronic and magnetic properties of pristine and hydrogenated borophene nanoribbons. Physica E: Low-Dimensional Systems and Nanostructures, 2017, 91, 106-112.	2.7	60
35	Improved thermoelectric performance in polycrystalline p-type Bi2Te3 via an alkali metal salt hydrothermal nanocoating treatment approach. Journal of Applied Physics, 2008, 104, .	2.5	59
36	Investigation of the sintering pressure and thermal conductivity anisotropy of melt-spun spark-plasma-sintered (Bi,Sb)₂Te₃ thermoelectric materials. Journal of Materials Research, 2011, 26, 1791-1799.	2.6	58

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37	Leveraging Deep Levels in Narrow Bandgap Bi_{0.5}Sb_{1.5}Te₃ for Recordâ€High zT_{ave} Near Room Temperature. Advanced Functional Materials, 2020, 30, 2005202.	14.9	57
38	Inter-tube bonding, graphene formation and anisotropic transport properties in spark plasma sintered multi-wall carbon nanotube arrays. Carbon, 2010, 48, 756-762.	10.3	56
39	Roomâ€temperature plastic inorganic semiconductors for flexible and deformable electronics. InformaÄnÃ-MateriÃ¡ly, 2021, 3, 22-35.	17.3	55
40	High-Temperature Thermoelectric Properties of Co4Sb12-Based Skutterudites with Multiple Filler Atoms: Ce0.1In x Yb y Co4Sb12. Journal of Electronic Materials, 2011, 40, 696-701.	2.2	53
41	Thermoelectric study of crossroads material MnTe via sulfur doping. Journal of Applied Physics, 2014, 115, .	2.5	53
42	Compositional Fluctuations Locked by Athermal Transformation Yielding High Thermoelectric Performance in GeTe. Advanced Materials, 2021, 33, e2005612.	21.0	52
43	High-Temperature Structural and Thermoelectric Study of Argyrodite Ag₈GeSe₆. ACS Applied Materials & Interfaces, 2019, 11, 2168-2176.	8.0	51
44	Origin of the Distinct Thermoelectric Transport Properties of Chalcopyrite ABTe₂ (A) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50	14.9	50
45	A study of Yb_{0.2}Co₄Sb₁₂â€“AgSbTe₂nanocomposites: simultaneous enhancement of all three thermoelectric properties. Journal of Materials Chemistry A, 2014, 2, 73-79.	10.3	45
46	Nonlinear optical signatures of the tensor order in Cd2Re2O7Â. Nature Physics, 2006, 2, 605-608.	16.7	43
47	High temperature thermoelectric properties of double-filled InxYbyCo4Sb12 skutterudites. Journal of Applied Physics, 2009, 105, 084907.	2.5	43
48	Combining positive and negative magnetophoreses to separate particles of different magnetic properties. Microfluidics and Nanofluidics, 2014, 17, 973-982.	2.2	43
49	Miscibility gap and thermoelectric properties of ecofriendly Mg₂Si_{1â^'x}Sn_x (0.1 â‰¤ x â‰¤ 0.8) solid solutions by flux method. Journal of Materials Research, 2011, 26, 3038-3043.	2.6	42
50	High thermoelectric figure of merit by resonant dopant in half-Heusler alloys. AIP Advances, 2017, 7, .	1.3	41
51	Thermoelectric Figure-of-Merit of Fully Dense Single-Crystalline SnSe. ACS Omega, 2019, 4, 5442-5450.	3.5	40
52	Significant enhancement in thermoelectric properties of polycrystalline Pr-doped SrTiO3â^'Î´ ceramics originating from nonuniform distribution of Pr dopants. Applied Physics Letters, 2014, 104, .	3.3	39
53	Enhancing the thermoelectric performance of nanosized CoSb₃via short-range percolation of electrically conductive WTe₂ inclusions. Journal of Materials Chemistry A, 2016, 4, 13874-13880.	10.3	38
54	High Thermoelectric Performance in Sulfideâ€Type Argyrodites Compound Ag₈Sn(S_{1â^'_x}Se_x)₆ Enabled by Ultralow Lattice Thermal Conductivity and Extended Cubic Phase Regime. Advanced Functional Materials, 2020, 30, 2000526.	14.9	38

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55	Tuning electrical and thermal connectivity in multiwalled carbon nanotube buckypaper. Journal of Physics Condensed Matter, 2010, 22, 334215.	1.8	37
56	Strain-Induced Ultrahigh Electron Mobility and Thermoelectric Figure of Merit in Monolayer Î±-Te. ACS Applied Materials & Interfaces, 2020, 12, 43901-43910.	8.0	36
57	Synthesis and Thermoelectric Properties of the Double-Filled Skutterudite Yb0.2In y Co4Sb12. Journal of Electronic Materials, 2009, 38, 981-984.	2.2	35
58	Enhancement of Thermoelectric Performance of Ballâ€Milled Bismuth Due to Sparkâ€Plasmaâ€Sinteringâ€Induced Interface Modifications. Advanced Materials, 2013, 25, 1033-1037.	21.0	35
59	Thermal conductivity and specific heat of bulk amorphous chalcogenides Ge20Te80â^'xSex (x=0,1,2,8). Journal of Non-Crystalline Solids, 2009, 355, 79-83.	3.1	33
60	Toward high thermoelectric performance p-type FeSb_{2.2}Te_{0.8}via in situ formation of InSb nanoinclusions. Journal of Materials Chemistry C, 2015, 3, 8372-8380.	5.5	33
61	Optimizing thermoelectric properties of BiSe through Cu additive enhanced effective mass and phonon scattering. Rare Metals, 2020, 39, 1374-1382.	7.1	33
62	n-Bi_{2â€“x}Sb_xTe₃: A Promising Alternative to Mainstream Thermoelectric Material n-Bi₂Te_{3â€“x}Se_x near Room Temperature. ACS Applied Materials & Interfaces, 2020, 12, 31619-31627.	8.0	33
63	Laser-assisted synthesis and optical properties of bismuth nanorods. Chemical Physics Letters, 2007, 442, 334-338.	2.6	31
64	Improving p-type thermoelectric performance of Mg2(Ge,Sn) compounds via solid solution and Ag doping. Intermetallics, 2013, 32, 312-317.	3.9	31
65	Mechanochemical synthesis of high thermoelectric performance bulk Cu2X (X = S, Se) materials. APL Materials, 2016, 4, .	5.1	30
66	Thermal conductivity of CoSb₃ nanoâ€composites grown via a novel solvothermal nanoâ€plating technique. Physica Status Solidi - Rapid Research Letters, 2007, 1, 229-231.	2.4	27
67	Thermoelectric properties of n-type double substituted SrTiO₃bulk materials. Dalton Transactions, 2010, 39, 1031-1035.	3.3	27
68	Thermoelectric materials with crystal-amorphicity duality induced by large atomic size mismatch. Joule, 2021, 5, 1183-1195.	24.0	27
69	Effects of partial La filling and Sb vacancy defects on <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>CoS</mml:mi><mml:msub><mml:mi mathvariant="normal">b</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:mrow></mml:math> skutterudites. Physical Review B, 2017, 95, .	3.2	26
70	Phonon-limited carrier mobility and temperature-dependent scattering mechanism of 3C -SiC from first principles. Physical Review B, 2019, 99, .	3.2	26
71	Evidence for surface states in pristine and Co-doped ZnO nanostructures: magnetization and nonlinear optical studies. Nanotechnology, 2011, 22, 095703.	2.6	24
72	Leveraging bipolar effect to enhance transverse thermoelectricity in semimetal Mg2Pb for cryogenic heat pumping. Nature Communications, 2021, 12, 3837.	12.8	24

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73	Spark-plasma-sintered barium zirconate based proton conductors for solid oxide fuel cell and hydrogen separation applications. International Journal of Hydrogen Energy, 2015, 40, 5707-5714.	7.1	23
74	Insights into the Proton Transport Mechanism in TiO₂ Simple Oxides by In Situ Raman Spectroscopy. ACS Applied Materials & Interfaces, 2020, 12, 38012-38018.	8.0	22
75	(GeTe)_{1â€“x}(AgSnSe₂)_x: Strong Atomic Disorder-Induced High Thermoelectric Performance near the Ioffeâ€“Regel Limit. ACS Applied Materials & Interfaces, 2021, 13, 47081-47089.	8.0	22
76	Spin Polarons in the Correlated Metallic PyrochloreCd2Re2O7. Physical Review Letters, 2010, 105, 076402.	7.8	20
77	Thermoelectric Properties of Li-Intercalated ZrSe2 Single Crystals. Journal of Electronic Materials, 2013, 42, 1751-1755.	2.2	20
78	Structural Modularization of Cu₂Te Leading to High Thermoelectric Performance near the Mottâ€“Ioffeâ€“Regel Limit. Advanced Materials, 2022, 34, e2108573.	21.0	20
79	Thermoelectric Properties of Mo3Sb5.4Te1.6 and Ni0.06Mo3Sb5.4Te1.6. Journal of Electronic Materials, 2007, 36, 727-731.	2.2	19
80	Fabrication and thermoelectric properties of Yb-doped ZrNiSn half-Heusler alloys. International Journal of Smart and Nano Materials, 2012, 3, 64-71.	4.2	19
81	Complex magnetic behavior of the saw-tooth Fe chains in Rb<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mrow /><mml:mn>2</mml:mn></mml:msub></mml:math>Fe<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mrow		

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91	Novel synthesis recipes boosting thermoelectric study of A2Q (Aâ€‰â€‰=â€‰â€‰Cu, Ag; Qâ€‰â€‰=â€‰â€‰S, Se, Te). Journal D: Applied Physics, 2020, 53, 193001.	2.8	12
92	New Directions in Bulk Thermoelectric Materials Research: Synthesis of Nanoscale Precursors for â€œBulk-Compositeâ€•Thermoelectric Materials. Materials Research Society Symposia Proceedings, 2005, 886, 1.	0.1	11
93	Crystal Growth, Structure, and Stoichiometry of the Superconducting Pyrochlore Cd2Re2O7. Journal of Electronic Materials, 2007, 36, 740-745.	2.2	11
94	The role of Î³-iron nanoparticulates in the growth of carbon nanotubes. Applied Physics Letters, 2008, 93, .	3.3	11
95	Raman spectra of double-filled skutterudites InxYbyCo4Sb12. Procedia Engineering, 2012, 27, 121-127.	1.2	11
96	Qualifying the Role of Indium in the Multiple-Filled Ce0.1InxYb0.2Co4Sb12 Skutterudite. Inorganics, 2014, 2, 168-176.	2.7	11
97	High temperature thermoelectric properties of skutterudite-Bi2Te3 nanocomposites. Intermetallics, 2016, 76, 33-40.	3.9	10
98	Fast ion transport for synthesis and stabilization of Î²-Zn4Sb3. Nature Communications, 2021, 12, 6077.	12.8	9
99	Theoretical investigations of electrical transport properties in CoSb3 skutterudites under hydrostatic loadings. Rare Metals, 2018, 37, 316-325.	7.1	8
100	Sub-50 picosecond to microsecond carrier transport dynamics in pentacene thin films. Applied Physics Letters, 2018, 113, 183509.	3.3	8
101	Direct visualization of spatially correlated displacive short-range ordering in Nb_{0.8}CoSb. Nanoscale, 2020, 12, 21624-21628.	5.6	8
102	Thermoelectric properties and Kondo behavior in indium incorporated p-type Ce0.9Fe3.5Ni0.5Sb12 skutterudites. Journal of Applied Physics, 2012, 112, 033710.	2.5	7
103	Significant improvement of thermoelectric performance in nanostructured bismuth networks. Nano Energy, 2012, 1, 706-713.	16.0	7
104	Enhancing Thermoelectric Properties of Si80Ge20 Alloys Utilizing the Decomposition of NaBH4 in the Spark Plasma Sintering Process. Energies, 2015, 8, 10958-10970.	3.1	7
105	Improving thermoelectric performance of (Bi0.2Sb0.8)2(Te0.97Se0.03)3 via Sm-doping. Journal of Alloys and Compounds, 2019, 787, 909-917.	5.5	7
106	Thermoelectric Materials: Compositional Fluctuations Locked by Athermal Transformation Yielding High Thermoelectric Performance in GeTe (Adv. Mater. 1/2021). Advanced Materials, 2021, 33, 2170008.	21.0	6
107	Single-crystal growth of NaxCo2O4 via a novel low-temperature flux method. Journal of Crystal Growth, 2008, 310, 665-670.	1.5	5
108	Synthesis and Structure of Bismuth(III)-Containing Noncentrosymmetric Phosphates, Cs₃KBi₂M₄(PO₄)₆Cl (M = Mn, Fe). Monoclinic (Cc) and Tetragonal (P4₃) Polymorphs Templated by Chlorine-Centered Cl(Bi₂Cs) Acentric Units. Inorganic Chemistry, 2012, 51, 9723-9729.	4.0	5

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109	Determination of inâ€plane thermal conductivity of Na_x Co₂O₄ single crystals via a parallel thermal conductance (PTC) technique. Physica Status Solidi (A) Applications and Materials Science, 2008, 205, 1152-1156.	1.8	4
110	New Ternary Arsenides for High-Temperature Thermoelectric Applications. Journal of Electronic Materials, 2009, 38, 1030-1036.	2.2	4
111	ELECTRICAL TRANSPORT PROPERTIES OF SINGLE-WALLED CARBON NANOTUBE BUNDLES TREATED WITH BORIC ACID. Nano, 2011, 06, 337-341.	1.0	4
112	Improving Thermoelectric Performance of Pulverized <I>p</I>-Type Bi₂Te₃ via a Grain Boundary Engineering Approach. Science of Advanced Materials, 2011, 3, 596-601.	0.7	4
113	Naturally occurring and stress induced tubular structures from mammalian cells, a survival mechanism. BMC Cell Biology, 2007, 8, 36.	3.0	3
114	LOW TEMPERATURE THERMOELECTRIC PROPERTIES AND AGING PHENOMENA OF NANOSTRUCTURED p-TYPEBi_{2-X}Sb_XTe₃(x =) Tj ETQq1 0.2 0 rgBT /Overlock	0.0	3
115	Synthesis and superconductivity in spark plasma sintered pristine and graphene-doped FeSe0.5Te0.5. Nanotechnology Reviews, 2015, 4, .	5.8	3
116	Synergistic effects of Lanthanum substitution on enhancing the thermoelectric properties of Î²-Zn4Sb3. Journal of Materiomics, 2016, 2, 273-279.	5.7	3
117	Thermal transport in phase-stabilized lithium zirconate phosphates. Applied Physics Letters, 2020, 117, 011903.	3.3	3
118	Enhanced Thermoelectric Performance and Electronic Transport Properties of Ag-Doped Cu2â€“xS0.5Se0.5. ACS Applied Energy Materials, 0, , .	5.1	3
119	The Study of Solvothermal Synthesis of Nano-Engineered CoSb3 Skutterudite Thermoelectric Materials. Materials Research Society Symposia Proceedings, 2007, 1044, 1.	0.1	2
120	Structure formation and very low thermal conductivity in Pb:Te:Ag:Se mixtures. Journal of Applied Physics, 2010, 107, 033519.	2.5	2
121	Enhanced ferromagnetic order in Sr4Mn3O3(GeO4)3 featuring canted [MnO4] spin chains of mixed-valent Mn(III)/Mn(IV). Aliovalent substitution of the Sr4â^'LnMnIII2+MnIV1â^'O3(GeO4)3 solid-solution. Journal of Solid State Chemistry, 2013, 206, 51-59.	2.9	2
122	Magnetoelastic coupling in A2FeReO6 (A = Ba and Ca) probed by elastic constants and magnetostriction measurements. Journal of Applied Physics, 2015, 117, .	2.5	2
123	Highly charged interface trap states in PbS1â^'x govern electro-thermal transport. APL Materials, 2019, 7, 071105.	5.1	2
124	Spark Plasma Sintering: A Brief Survey of Recent Patents. Recent Patents on Materials Science, 2012, 5, 191-198.	0.5	2
125	Lattice thermal transport in double-filled skutterudites In0.1Yb y Co4Sb12. Journal Wuhan University of Technology, Materials Science Edition, 2013, 28, 677-681.	1.0	1
126	Multi-Principal-Element Approach to High-Performance Thermoelectric Materials. , 2022, , 491-499.		1

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127	Thermoelectric Study on Polycrystalline La1âˆ'xSrxRuO3. Materials Research Society Symposia Proceedings, 2005, 886, 1.	0.1	0
128	New Opportunities in Existing Thermoelectric Materials: Grain Boundary Engineering in Pulverized p-Bi2Te3 System. Materials Research Society Symposia Proceedings, 2007, 1044, 1.	0.1	0
129	Synthesis and Optical Properties of 1D Bismuth Nanorods. Materials Research Society Symposia Proceedings, 2007, 1044, 1.	0.1	0