Qihao Zhang

List of Publications by Year
in descending order

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124 papers	19,284 citations	36203 51 h-index	18075 120 g-index
125 all docs	125 docs citations	125 times ranked	14096 citing authors

#	Article	IF	Citations
1	Convergence of electronic bands for high performance bulk thermoelectrics. Nature, 2011, 473, 66-69.	13.7	3,306
2	Nitrogen-doped mesoporous carbon of extraordinary capacitance for electrochemical energy storage. Science, 2015, 350, 1508-1513.	6.0	1,821
3	Copper ion liquid-like thermoelectrics. Nature Materials, 2012, 11, 422-425.	13.3	1,700
4	Multiple-Filled Skutterudites: High Thermoelectric Figure of Merit through Separately Optimizing Electrical and Thermal Transports. Journal of the American Chemical Society, 2011, 133, 7837-7846.	6.6	1,242
5	Realizing high figure of merit in heavy-band p-type half-Heusler thermoelectric materials. Nature Communications, 2015, 6, 8144.	5.8	893
6	Visible-light photocatalytic, solar thermal and photoelectrochemical properties of aluminium-reduced black titania. Energy and Environmental Science, 2013, 6, 3007.	15.6	626
7	Hâ€Doped Black Titania with Very High Solar Absorption and Excellent Photocatalysis Enhanced by Localized Surface Plasmon Resonance. Advanced Functional Materials, 2013, 23, 5444-5450.	7.8	621
8	Enhanced Thermoelectric Performance of Single-Walled Carbon Nanotubes/Polyaniline Hybrid Nanocomposites. ACS Nano, 2010, 4, 2445-2451.	7.3	605
9	High-entropy-stabilized chalcogenides with high thermoelectric performance. Science, 2021, 371, 830-834.	6.0	546
10	Flexible Thermoelectric Materials and Generators: Challenges and Innovations. Advanced Materials, 2019, 31, e1807916.	11.1	419
11	High efficiency Bi₂Te₃-based materials and devices for thermoelectric power generation between 100 and 300 Â°C. Energy and Environmental Science, 2016, 9, 3120-3127.	15.6	358
12	Ultrahigh thermoelectric performance in Cu₂Se-based hybrid materials with highly dispersed molecular CNTs. Energy and Environmental Science, 2017, 10, 1928-1935.	15.6	298
13	High performance n-type Ag2Se film on nylon membrane for flexible thermoelectric power generator. Nature Communications, 2019, 10, 841.	5.8	291
14	Abnormally enhanced thermoelectric transport properties of SWNT/PANI hybrid films by the strengthened PANI molecular ordering. Energy and Environmental Science, 2014, 7, 3801-3807.	15.6	285
15	Realizing a thermoelectric conversion efficiency of 12% in bismuth telluride/skutterudite segmented modules through full-parameter optimization and energy-loss minimized integration. Energy and Environmental Science, 2017, 10, 956-963.	15.6	274
16	Skutterudite with graphene-modified grain-boundary complexion enhances zT enabling high-efficiency thermoelectric device. Energy and Environmental Science, 2017, 10, 183-191.	15.6	252
17	Cu-based thermoelectric materials. Energy Storage Materials, 2016, 3, 85-97.	9.5	247
18	Enhanced thermoelectric properties of CNT/PANI composite nanofibers by highly orienting the arrangement of polymer chains. Journal of Materials Chemistry, 2012, 22, 17612.	6.7	236

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19	Thermoelectric materials step up. Nature Materials, 2016, 15, 691-692.	13.3	236
20	Superior energy density through tailored dopant strategies in multilayer ceramic capacitors. Energy and Environmental Science, 2020, 13, 2938-2948.	15.6	212
21	Ultrahigh Thermoelectric Performance in Mosaic Crystals. Advanced Materials, 2015, 27, 3639-3644.	11.1	195
22	Flexible thermoelectrics: from silver chalcogenides to full-inorganic devices. Energy and Environmental Science, 2019, 12, 2983-2990.	15.6	188
23	Ultrahigh power factor and flexible silver selenide-based composite film for thermoelectric devices. Energy and Environmental Science, 2020, 13, 1240-1249.	15.6	165
24	Recent Advances in Liquidâ€Like Thermoelectric Materials. Advanced Functional Materials, 2020, 30, 1903867.	7.8	148
25	Ultrahigh energy density in short-range tilted NBT-based lead-free multilayer ceramic capacitors by nanodomain percolation. Energy Storage Materials, 2021, 38, 113-120.	9.5	139
26	High-efficiency half-Heusler thermoelectric modules enabled by self-propagating synthesis and topologic structure optimization. Energy and Environmental Science, 2019, 12, 3390-3399.	15.6	135
27	Highly anisotropic P3HT films with enhanced thermoelectric performance via organic small molecule epitaxy. NPG Asia Materials, 2016, 8, e292-e292.	3.8	131
28	Novel BaTiO₃-Based, Ag/Pd-Compatible Lead-Free Relaxors with Superior Energy Storage Performance. ACS Applied Materials & Interfaces, 2020, 12, 43942-43949.	4.0	130
29	Large thermoelectric power factor in polyaniline/graphene nanocomposite films prepared by solution-assistant dispersing method. Journal of Materials Chemistry A, 2014, 2, 11107.	5.2	120
30	Realization of high thermoelectric performance in n-type partially filled skutterudites. Journal of Materials Research, 2011, 26, 1745-1754.	1.2	112
31	Copper chalcogenide thermoelectric materials. Science China Materials, 2019, 62, 8-24.	3.5	111
32	Highâ€Efficiency Thermoelectric Power Generation Enabled by Homogeneous Incorporation of MXene in (Bi,Sb)₂Te₃ Matrix. Advanced Energy Materials, 2020, 10, 1902986.	10.2	109
33	Engineering carrier scattering at the interfaces in polyaniline based nanocomposites for high thermoelectric performances. Materials Chemistry Frontiers, 2017, 1, 741-748.	3.2	107
34	Effect of antisite defects on band structure and thermoelectric performance of ZrNiSn half-Heusler alloys. Applied Physics Letters, 2010, 96, .	1.5	106
35	Evaluating the potential for high thermoelectric efficiency of silver selenide. Journal of Materials Chemistry C, 2013, 1, 7568.	2.7	105
36	Thermoelectric transport properties of diamond-like Cu1â^'xFe1+xS2 tetrahedral compounds. Journal of Applied Physics, 2014, 116, .	1.1	104

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37	Electrode interface optimization advances conversion efficiency and stability of thermoelectric devices. Nature Communications, 2020, 11, 2723.	5.8	101
38	High efficiency GeTe-based materials and modules for thermoelectric power generation. Energy and Environmental Science, 2021, 14, 995-1003.	15.6	101
39	Superior performance and high service stability for GeTe-based thermoelectric compounds. National Science Review, 2019, 6, 944-954.	4.6	96
40	Cu₈GeSe₆-based thermoelectric materials with an argyrodite structure. Journal of Materials Chemistry C, 2017, 5, 943-952.	2.7	93
41	Enhanced thermoelectric performance by the combination of alloying and doping in TiCoSb-based half-Heusler compounds. Journal of Applied Physics, 2009, 106, .	1.1	92
42	Halfâ€Heusler Thermoelectric Module with High Conversion Efficiency and High Power Density. Advanced Energy Materials, 2020, 10, 2000888.	10.2	85
43	Micro-thermoelectric devices. Nature Electronics, 2022, 5, 333-347.	13.1	84
44	Optimized thermoelectric properties of Mo3Sb7âˆ'xTex with significant phonon scattering by electrons. Energy and Environmental Science, 2011, 4, 4086.	15.6	77
45	Stacking faults modulation for scattering optimization in GeTe-based thermoelectric materials. Nano Energy, 2020, 68, 104347.	8.2	77
46	Recent Developments in Flexible Thermoelectric Devices. Small Science, 2021, 1, 2100005.	5.8	74
47	High thermoelectric performance and low thermal conductivity in Cu2âˆ'yS1/3Se1/3Te1/3 liquid-like materials with nanoscale mosaic structures. Nano Energy, 2017, 42, 43-50.	8.2	73
48	Conformal organicâ€“inorganic semiconductor composites for flexible thermoelectrics. Energy and Environmental Science, 2020, 13, 511-518.	15.6	67
49	Compound defects and thermoelectric properties in ternary CuAgSe-based materials. Journal of Materials Chemistry A, 2015, 3, 13662-13670.	5.2	58
50	Optimized thermoelectric properties in pseudocubic diamond-like CuGaTe₂ compounds. Journal of Materials Chemistry A, 2016, 4, 1277-1289.	5.2	57
51	Fabrication of a CoSb3-based thermoelectric module. Materials Science in Semiconductor Processing, 2010, 13, 221-224.	1.9	54
52	Reduction of thermal conductivity by low energy multi-Einstein optic modes. Journal of Materiomics, 2016, 2, 187-195.	2.8	53
53	Microstructure Contact Studies for Skutterudite Thermoelectric Devices. International Journal of Applied Ceramic Technology, 2012, 9, 733-741.	1.1	51
54	Microstructural evolution of the interfacial layer in the Tiâ€“Al/Yb0.6Co4Sb12 thermoelectric joints at high temperature. Journal of Alloys and Compounds, 2014, 610, 665-670.	2.8	51

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55	Synergistically Improved Molecular Doping and Carrier Mobility by Copolymerization of Donorâ€“Acceptor and Donorâ€“Donor Building Blocks for Thermoelectric Application. Advanced Functional Materials, 2020, 30, 2004378.	7.8	51
56	Suppressed intrinsic excitation and enhanced thermoelectric performance in Ag_xBi_{0.5}Sb_{1.5â^'x}Te₃. Journal of Materials Chemistry C, 2017, 5, 12619-12628.	2.7	49
57	Enhanced Thermoelectric Performance and Service Stability of Cu₂Se Via Tailoring Chemical Compositions at Multiple Atomic Positions. Advanced Functional Materials, 2020, 30, 1908315.	7.8	46
58	Discovery of high-performance thermoelectric copper chalcogenide using modified diffusion-couple high-throughput synthesis and automated histogram analysis technique. Energy and Environmental Science, 2020, 13, 3041-3053.	15.6	43
59	Composition optimization of p-type skutterudites CeyFexCo4â^'xSb12 and YbyFexCo4â^'xSb12. Journal of Materials Research, 2011, 26, 1813-1819.	1.2	42
60	Black strontium titanate nanocrystals of enhanced solar absorption for photocatalysis. CrystEngComm, 2015, 17, 7528-7534.	1.3	40
61	pâ€Type Plastic Inorganic Thermoelectric Materials. Advanced Energy Materials, 2021, 11, 2100883.	10.2	40
62	Enhanced thermoelectric performance in In1â^'xGaxSb originating from the scattering of point defects and nanoinclusion. Journal of Materials Chemistry, 2011, 21, 12398.	6.7	39
63	Quaternary Pseudocubic Cu₂TMSnSe₄ (TM = Mn, Fe, Co) Chalcopyrite Thermoelectric Materials. Advanced Electronic Materials, 2016, 2, 1600312.	2.6	39
64	Oneâ€step Synthesis and Enhanced Thermoelectric Properties of Polymerâ€“Quantum Dot Composite Films. Angewandte Chemie - International Edition, 2018, 57, 8037-8042.	7.2	38
65	Low thermal conductivity and enhanced thermoelectric performance of Gd-filled skutterudites. Journal of Applied Physics, 2011, 109, 023719.	1.1	37
66	Investigation on Low-Temperature Thermoelectric Properties of Ag₂Se Polycrystal Fabricated by Using Zone-Melting Method. Journal of Physical Chemistry Letters, 2021, 12, 8246-8255.	2.1	37
67	High-temperature thermoelectric properties of Cu1.97Ag0.03Se1+y. Materials for Renewable and Sustainable Energy, 2014, 3, 1.	1.5	36
68	Thermoelectric properties of non-stoichiometric Cu2+xSn1â^'xS3 compounds. Journal of Applied Physics, 2019, 126, .	1.1	35
69	Study on the interfacial stability of p-type Ti/Ce Fe Co4Sb12 thermoelectric joints at high temperature. Journal of Alloys and Compounds, 2016, 671, 238-244.	2.8	33
70	Electrical and thermal transport properties of Y bxCo4Sb12 filled skutterudites with ultrahigh carrier concentrations. AIP Advances, 2015, 5, .	0.6	31
71	Refined band structure plus enhanced phonon scattering realizes thermoelectric performance optimization in Culâ€“Mn codoped SnTe. Journal of Materials Chemistry A, 2021, 9, 13065-13070.	5.2	30
72	Quick Fabrication and Thermoelectric Properties of Cu12Sb4S13 Tetrahedrite. Journal of Electronic Materials, 2016, 45, 2274-2277.	1.0	27

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73	Structural evolvement and thermoelectric properties of Cu_{3â^'x}Sn_xSe₃ compounds with diamond-like crystal structures. Dalton Transactions, 2014, 43, 16788-16794.	1.6	26
74	Thermoelectric properties of n-type Cu₄Sn₇S₁₆-based compounds. RSC Advances, 2019, 9, 7826-7832.	1.7	26
75	Mg₃(Bi,Sb)₂-based thermoelectric modules for efficient and reliable waste-heat utilization up to 750 K. Energy and Environmental Science, 2022, 15, 3265-3274.	15.6	26
76	In situ poling X-ray diffraction studies of lead-free BiFeO3â€"SrTiO3 ceramics. Materials Today Physics, 2021, 19, 100426.	2.9	24
77	Microstructure and composition engineering Yb single-filled CoSb3 for high thermoelectric and mechanical performances. Journal of Materiomics, 2019, 5, 702-710.	2.8	23
78	Enhanced Thermoelectric and Mechanical Performances in Sintered Bi_{0.48}Sb_{1.52}Te₃â€"AgSbSe₂ Composite. ACS Applied Materials & Interfaces, 2021, 13, 24937-24944.	4.0	23
79	A low-cost and eco-friendly Br-doped Cu₇Sn₃S₁₀ thermoelectric compound with zT around unity. Journal of Materials Chemistry A, 2021, 9, 7946-7954.	5.2	23
80	High-Temperature Oxidation Behavior of Filled Skutterudites Yb y Co4Sb12. Journal of Electronic Materials, 2012, 41, 2225-2231.	1.0	22
81	Influence of electronic type of SWNTs on the thermoelectric properties of SWNTs/PANI composite films. Organic Electronics, 2016, 39, 146-152.	1.4	22
82	Enhanced thermoelectric performance of CNT/P3HT composites with low CNT content. RSC Advances, 2018, 8, 33855-33863.	1.7	22
83	Good stability and high thermoelectric performance of Fe doped Cu_{1.80}S. Physical Chemistry Chemical Physics, 2020, 22, 7374-7380.	1.3	22
84	Enhancing thermoelectric performance of bismuth selenide films by constructing a double-layer nanostructure. CrystEngComm, 2010, 12, 2672.	1.3	21
85	Transparent Powerâ€Generating Windows Based on Solarâ€Thermalâ€Electric Conversion. Advanced Energy Materials, 2021, 11, 2101213.	10.2	21
86	(001)-oriented Cu2-ySe thin films with tunable thermoelectric performances grown by pulsed laser deposition. Ceramics International, 2015, 41, 7439-7445.	2.3	20
87	Semiconducting polymer contributes favorably to the Seebeck coefficient in multi-component, high-performance n-type thermoelectric nanocomposites. Journal of Materials Chemistry A, 2020, 8, 9797-9805.	5.2	20
88	Highâ€energy storage performance in BaTiO3â€based leadâ€free multilayer ceramic capacitors. Journal of Materials Research, 2021, 36, 1285-1294.	1.2	19
89	High-performance n-type Ta₄SiTe₄/polyvinylidene fluoride (PVDF)/graphdiyne organicâ€"inorganic flexible thermoelectric composites. Energy and Environmental Science, 2021, 14, 6586-6594.	15.6	19
90	Optimized Thermoelectric Properties of Bi_{0.48}Sb_{1.52}Te₃ through AgCuTe Doping for Low-Grade Heat Harvesting. ACS Applied Materials & Interfaces, 2021, 13, 57514-57520.	4.0	19

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91	A general strategy to bismuth chalcogenide films by chemical vapor transport. Journal of Materials Chemistry, 2011, 21, 2351-2355.	6.7	18
92	Optimizing the Thermoelectric Performance of Poly(3â€hexylthiophene) through Molecularâ€Weight Engineering. Chemistry - an Asian Journal, 2018, 13, 3246-3253.	1.7	18
93	Understanding the Intrinsic Carrier Transport in Highly Oriented Poly(3-hexylthiophene): Effect of Side Chain Regioregularity. Polymers, 2018, 10, 815.	2.0	17
94	Exceptionally Heavy Doping Boosts the Performance of Iron Silicide for Refractory Thermoelectrics. Advanced Energy Materials, 2022, 12, .	10.2	17
95	Investigation of the thermal conductivities across metal-insulator transition in polycrystalline VO2. Science Bulletin, 2012, 57, 3393-3396.	1.7	16
96	Creation of Yb2O3 Nanoprecipitates Through an Oxidation Process in Bulk Yb-Filled Skutterudites. Journal of Electronic Materials, 2013, 42, 382-388.	1.0	15
97	A high-throughput strategy to screen interfacial diffusion barrier materials for thermoelectric modules. Journal of Materials Research, 2019, 34, 1179-1187.	1.2	15
98	Oxidation Behavior of Filled Skutterudite CeFe4Sb12 in Air. Journal of Electronic Materials, 2014, 43, 1639-1644.	1.0	13
99	High-Throughput Screening for Thermoelectric Semiconductors with Desired Conduction Types by Energy Positions of Band Edges. Journal of the American Chemical Society, 2022, 144, 8030-8037.	6.6	13
100	Post-annealing Effect on Microstructures and Thermoelectric Properties of Bi0.45Sb1.55Te3 Thin Films Deposited by Co-sputtering. Journal of Electronic Materials, 2012, 41, 3068-3072.	1.0	12
101	Singleâ€Solution Doping Enabling Dominant Integer Charge Transfer for Synergistically Improved Carrier Concentration and Mobility in Donorâ€“Acceptor Polymers. Advanced Functional Materials, 2022, 32, .	7.8	12
102	Thermoelectric Properties of Nanoâ€grained Mooihoekite Cu₉Fe₉S₁₆. Zeitschrift Fur Anorganische Und Allgemeine Chemie, 2020, 646, 1116-1121.	0.6	11
103	Nano-scaled top-down of bismuth chalcogenides based on electrochemical lithium intercalation. Journal of Nanoparticle Research, 2011, 13, 6569-6578.	0.8	9
104	Low-Temperature Magnetic and Thermoelectric Properties of Layered Ca_{0.33}CoO₂ Crystals. Journal of the Physical Society of Japan, 2011, 80, 074802.	0.7	9
105	Interface Microstructure and Performance of Sb Contacts in Bismuth Telluride-Based Thermoelectric Elements. Journal of Electronic Materials, 2013, 42, 1219-1224.	1.0	9
106	A high-efficiency GeTe-based thermoelectric module for low-grade heat recovery. Journal of Materials Chemistry A, 2022, 10, 7677-7683.	5.2	9
107	Solution Route to PbSe Films with Enhanced Thermoelectric Transport Properties. European Journal of Inorganic Chemistry, 2010, 2010, 4321-4324.	1.0	8
108	Microstructures and thermoelectric properties of p-type Bi x Sb2â^'x Te3 thin films with various compositions. Electronic Materials Letters, 2013, 9, 709-713.	1.0	7

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109	Conductive Polymers: Synergistically Improved Molecular Doping and Carrier Mobility by Copolymerization of Donorâ€“Acceptor and Donorâ€“Donor Building Blocks for Thermoelectric Application (Adv. Funct. Mater. 40/2020). Advanced Functional Materials, 2020, 30, 2070270.	7.8	7
110	High-Performance and Stable (Ag, Cd)-Containing ZnSb Thermoelectric Compounds. ACS Applied Materials & Interfaces, 2022, 14, 26662-26670.	4.0	6
111	Topotactic synthesis of alternately stacked Ca3Co4O9/Î³-Na0.66CoO2 composite with nanoscale layer structure. CrystEngComm, 2010, 12, 4080.	1.3	5
112	Microstructure and contact resistivity of (Bi, Sb)2Te3/Sb interface. , 2012, , .		5
113	Unusually high Seebeck coefficient arising from temperature-dependent carrier concentration in PbSeâ€“AgSbSe₂ alloys. Journal of Materials Chemistry C, 2021, 9, 17365-17370.	2.7	5
114	Optimized thermoelectric properties of Bi_{0.48}Sb_{1.52}Te₃/BN composites. Journal of Materials Chemistry C, 2022, 10, 3172-3177.	2.7	5
115	Thermoelectrics: pâ€Type Plastic Inorganic Thermoelectric Materials (Adv. Energy Mater. 23/2021). Advanced Energy Materials, 2021, 11, 2170086.	10.2	4
116	Interfacial behaviors of p-type CeyFexCo4â€“xSb12/Nb thermoelectric joints. Functional Materials Letters, 2020, 13, 2051020.	0.7	2
117	Design and fabrication of thermoelectric devices. , 2021, , 221-267.		2
118	Thermoelectric Properties of Heavy Rare Earth Filled Skutterudites Dy y Fe x Co4â^'x Sb12. Journal of Electronic Materials, 2012, 41, 3402-3410.	1.0	1
119	Temperature-dependent photoluminescence study of Pb²⁺ doped strontium iodide. , 2013, , .		1
120	Segmented modules. , 2021, , 469-492.		1
121	In Situ Partial Pyrolysis of Sodium Carboxymethyl Cellulose Constructing Hierarchical Pores in the Silicon Anode for Lithium-Ion Batteries. ACS Applied Energy Materials, 2022, 5, 380-386.	2.5	1
122	Boosting thermoelectric performance of BayCo4Sb12 by interlinking large aspect-ratio silver nanowires at the triple junction of grain boundaries. Materials Today Energy, 2022, , 101007.	2.5	1
123	Electric-induced devilâ€™s staircase in perovskite antiferroelectric. Journal of Applied Physics, 2022, 131, .	1.1	1
124	High-energy storage performance in BaTiO₃-based lead-free multilayer ceramic capacitors. Journal of Materials Research, 0, , 1-10.	1.2	0