

Zihang Liu

List of Publications by Year in Descending Order

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Version: 2024-04-10

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

69 papers	3,553 citations	34 h-index	59 g-index
71 ext. papers	4,609 ext. citations	12.1 avg, IF	5.64 L-index

#	Paper	IF	Citations
69	Nanostructured Bulk Thermoelectric Materials for Energy Harvesting. <i>NIMS Monographs</i> , 2022 , 199-231	0.3	1
68	Nanotwins Strengthening High Thermoelectric Performance Bismuth Antimony Telluride Alloys.. <i>Advanced Science</i> , 2022 , e2200432	13.6	1
67	Maximizing the performance of n-type MgBi based materials for room-temperature power generation and thermoelectric cooling.. <i>Nature Communications</i> , 2022 , 13, 1120	17.4	10
66	Mediating Point Defects Endows n-Type Bi Te with High Thermoelectric Performance and Superior Mechanical Robustness for Power Generation Application.. <i>Small</i> , 2022 , e2201352	11	3
65	Electronic Orbital Alignment and Hierarchical Phonon Scattering Enabling High Thermoelectric Performance p-Type MgSb Zintl Compounds.. <i>Research</i> , 2022 , 2022, 9842949	7.8	0
64	High-performance lead-free cubic GeTe-based thermoelectric alloy. <i>Cell Reports Physical Science</i> , 2022 , 100902	6.1	1
63	Improved thermoelectric and mechanical performance of Sb ₂ Te ₃ based materials towards the segmented operation. <i>Materials Today Energy</i> , 2022 , 101045	7	0
62	Effect of native defects on thermoelectric properties of copper iodide films. <i>Emergent Materials</i> , 2021 , 4, 761-768	3.5	4
61	Demonstration of ultrahigh thermoelectric efficiency of ~7.3% in Mg ₃ Sb ₂ /MgAgSb module for low-temperature energy harvesting. <i>Joule</i> , 2021 , 5, 1196-1208	27.8	70
60	Role of phase separation in nanocomposite indium-tin-oxide films for transparent thermoelectric applications. <i>Journal of Materiomics</i> , 2021 , 7, 612-620	6.7	10
59	Improved thermoelectric performance of GeTe via efficient yttrium doping. <i>Applied Physics Letters</i> , 2021 , 118, 033901	3.4	11
58	A material catalogue with glass-like thermal conductivity mediated by crystallographic occupancy for thermoelectric application. <i>Energy and Environmental Science</i> , 2021 , 14, 3579-3587	35.4	11
57	Thermoelectric Performance of Cr Doped and Cr-Fe Double-Doped Higher Manganese Silicides with Adjusted Carrier Concentration and Significant Electron-Phonon Interaction. <i>ACS Applied Materials & Interfaces</i> , 2021 , 13, 8574-8583	9.5	5
56	Constructing multi-type defects in In _{0.1} Sb _{1.9} Te ₃ -(MgB ₂) composites: Simultaneously enhancing the thermoelectric and mechanical properties. <i>Nano Energy</i> , 2021 , 90, 106530	17.1	1
55	Prediction of improved thermoelectric performance by ordering in double half-Heusler materials. <i>Journal of Materials Chemistry A</i> , 2020 , 8, 23590-23598	13	9
54	High Power Factor and Enhanced Thermoelectric Performance in Sc and Bi Codoped GeTe: Insights into the Hidden Role of Rhombohedral Distortion Degree. <i>Advanced Energy Materials</i> , 2020 , 10, 2002588	21.8	45
53	Influence of Carrier Density and Energy Barrier Scattering on a High Seebeck Coefficient and Power Factor in Transparent Thermoelectric Copper Iodide. <i>ACS Applied Energy Materials</i> , 2020 , 3, 10037-10044	6.1	21

52	Shaping the role of germanium vacancies in germanium telluride: metastable cubic structure stabilization, band structure modification, and stable N-type conduction. <i>NPG Asia Materials</i> , 2020 , 12,	10.3	19
51	Significant off-stoichiometry effect leading to the N-type conduction and ferromagnetic properties in titanium doped Fe ₂ VAI thin films. <i>Acta Materialia</i> , 2020 , 200, 848-856	8.4	5
50	Understanding the asymmetrical thermoelectric performance for discovering promising thermoelectric materials. <i>Science Advances</i> , 2019 , 5, eaav5813	14.3	27
49	High thermoelectric cooling performance of n-type MgBi-based materials. <i>Science</i> , 2019 , 365, 495-498	33.3	240
48	Design of High-Performance Disordered Half-Heusler Thermoelectric Materials Using 18-Electron Rule. <i>Advanced Functional Materials</i> , 2019 , 29, 1905044	15.6	38
47	New insights into the role of dislocation engineering in N-type filled skutterudite CoSb ₃ . <i>Journal of Materials Chemistry C</i> , 2019 , 7, 13622-13631	7.1	9
46	Discovery of TaFeSb-based half-Heuslers with high thermoelectric performance. <i>Nature Communications</i> , 2019 , 10, 270	17.4	155
45	Nano-microstructural control of phonon engineering for thermoelectric energy harvesting. <i>MRS Bulletin</i> , 2018 , 43, 181-186	3.2	80
44	Ultrahigh Power Factor in Thermoelectric System NbMFeSb (M = Hf, Zr, and Ti). <i>Advanced Science</i> , 2018 , 5, 1800278	13.6	31
43	Large thermoelectric power factor from crystal symmetry-protected non-bonding orbital in half-Heuslers. <i>Nature Communications</i> , 2018 , 9, 1721	17.4	77
42	Self-compensation induced vacancies for significant phonon scattering in InSb. <i>Nano Energy</i> , 2018 , 48, 189-196	17.1	23
41	High thermoelectric performance of δ MgAgSb for power generation. <i>Energy and Environmental Science</i> , 2018 , 11, 23-44	35.4	94
40	Extraordinary thermoelectric performance in n-type manganese doped Mg ₃ Sb ₂ Zintl: High band degeneracy, tuned carrier scattering mechanism and hierarchical microstructure. <i>Nano Energy</i> , 2018 , 52, 246-255	17.1	117
39	Phase-transition temperature suppression to achieve cubic GeTe and high thermoelectric performance by Bi and Mn codoping. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018 , 115, 5332-5337	11.5	130
38	Synergistic coupling of lamellar MoSe ₂ and SnO ₂ nanoparticles via chemical bonding at interface for stable and high-power sodium-ion capacitors. <i>Chemical Engineering Journal</i> , 2018 , 354, 1164-1173	14.7	48
37	Fresh MoO ₂ as a better electrode for pseudocapacitive sodium-ion storage. <i>New Journal of Chemistry</i> , 2018 , 42, 14721-14724	3.6	7
36	The critical role of boron doping in the thermoelectric and mechanical properties of nanostructured δ MgAgSb. <i>Journal of Materials Chemistry C</i> , 2018 , 6, 9821-9827	7.1	6
35	Discovery of ZrCoBi based half Heuslers with high thermoelectric conversion efficiency. <i>Nature Communications</i> , 2018 , 9, 2497	17.4	154

34	Advances in thermoelectrics. <i>Advances in Physics</i> , 2018 , 67, 69-147	18.4	225
33	High thermoelectric performance of single phase p-type cerium-filled skutterudites by dislocation engineering. <i>Journal of Materials Chemistry A</i> , 2018 , 6, 20128-20137	13	15
32	Extraordinary Thermoelectric Performance Realized in Hierarchically Structured AgSbSe with Ultralow Thermal Conductivity. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 18685-18692	9.5	30
31	Grain Boundary Engineering for Achieving High Thermoelectric Performance in n-Type Skutterudites. <i>Advanced Energy Materials</i> , 2017 , 7, 1602582	21.8	146
30	The microscopic origin of low thermal conductivity for enhanced thermoelectric performance of Yb doped MgAgSb. <i>Acta Materialia</i> , 2017 , 128, 227-234	8.4	30
29	Thermoelectric Properties of n-type ZrNiPb-Based Half-Heuslers. <i>Chemistry of Materials</i> , 2017 , 29, 867-876	26	48
28	Phonon scattering by nanoscale twin boundaries. <i>Nano Energy</i> , 2017 , 32, 174-179	17.1	54
27	Anomalous electrical conductivity of n-type Te-doped Mg ₃ 2Sb1.5Bi0.5. <i>Materials Today Physics</i> , 2017 , 3, 1-6	8	67
26	Tellurium doped n-type Zintl Zr ₃ Ni ₃ Sb ₄ thermoelectric materials: Balance between carrier-scattering mechanism and bipolar effect. <i>Materials Today Physics</i> , 2017 , 2, 54-61	8	56
25	Enhanced thermoelectric and mechanical properties of p-type skutterudites with in situ formed Fe ₃ Si nanoprecipitate. <i>Inorganic Chemistry Frontiers</i> , 2017 , 4, 1697-1703	6.8	13
24	Manipulation of ionized impurity scattering for achieving high thermoelectric performance in n-type MgSb-based materials. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017 , 114, 10548-10553	11.5	183
23	Defect Engineering for Realizing High Thermoelectric Performance in n-Type Mg ₃ Sb ₂ -Based Materials. <i>ACS Energy Letters</i> , 2017 , 2, 2245-2250	20.1	130
22	The influence of doping sites on achieving higher thermoelectric performance for nanostructured $\overline{\text{MgAgSb}}$. <i>Nano Energy</i> , 2017 , 31, 194-200	17.1	35
21	Mechanical properties of nanostructured thermoelectric materials $\overline{\text{MgAgSb}}$. <i>Scripta Materialia</i> , 2017 , 127, 72-75	5.6	50
20	Materials for Near-Room Temperatures 2017 , 67-106		
19	Enhancement of thermoelectric performance of phase pure Zintl compounds Ca _{1-x} Bi _x Zn ₂ Sb ₂ , Ca _{1-x} Bu _x Zn ₂ Sb ₂ , and Eu _{1-x} Bi _x Zn ₂ Sb ₂ by mechanical alloying and hot pressing. <i>Nano Energy</i> , 2016 , 25, 136-144	17.1	54
18	Lithium Doping to Enhance Thermoelectric Performance of MgAgSb with Weak Electron-Phonon Coupling. <i>Advanced Energy Materials</i> , 2016 , 6, 1502269	21.8	96
17	Thermoelectric properties of Bi-based Zintl compounds Ca _{1-x} Yb _x Mg ₂ Bi ₂ . <i>Journal of Materials Chemistry A</i> , 2016 , 4, 4312-4320	13	69

16	Thermoelectric properties of materials near the band crossing line in Mg ₂ Sn/Mg ₂ Ge/Mg ₂ Si system. <i>Acta Materialia</i> , 2016 , 103, 633-642	8.4	85
15	Effects of antimony content in MgAg _{0.97} Sb _x on output power and energy conversion efficiency. <i>Acta Materialia</i> , 2016 , 102, 17-23	8.4	37
14	Thermoelectric performance enhancement of Mg ₂ Sn based solid solutions by band convergence and phonon scattering via Pb and Si/Ge substitution for Sn. <i>Physical Chemistry Chemical Physics</i> , 2016 , 18, 20726-37	3.6	26
13	Higher thermoelectric performance of Zintl phases (Eu _{0.5} Yb _{0.5}) _{1-x} CaxMg ₂ Bi ₂ by band engineering and strain fluctuation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016 , 113, E4125-32	11.5	109
12	Size effect in thermoelectric materials. <i>Npj Quantum Materials</i> , 2016 , 1,	5	154
11	Thermoelectric properties of Zintl compound Ca _{1-x} NaxMg ₂ Bi _{1.98} . <i>Applied Physics Letters</i> , 2016 , 108, 183901	3.4	24
10	Effect of Cd isoelectronic substitution on thermoelectric properties of Zn _{0.995} Na _{0.005} Sb. <i>Journal of Materiomics</i> , 2016 , 2, 324-330	6.7	2
9	Understanding and manipulating the intrinsic point defect in δ MgAgSb for higher thermoelectric performance. <i>Journal of Materials Chemistry A</i> , 2016 , 4, 16834-16840	13	39
8	The effect of nickel doping on electron and phonon transport in the n-type nanostructured thermoelectric material CoSbS. <i>Journal of Materials Chemistry C</i> , 2015 , 3, 10442-10450	7.1	40
7	Enhanced thermoelectric performance of Bi ₂ S ₃ by synergistical action of bromine substitution and copper nanoparticles. <i>Nano Energy</i> , 2015 , 13, 554-562	17.1	55
6	High thermoelectric power factor in Cu ₃ Ni alloy originate from potential barrier scattering of twin boundaries. <i>Nano Energy</i> , 2015 , 17, 279-289	17.1	56
5	Contrasting the Role of Mg and Ba Doping on the Microstructure and Thermoelectric Properties of p-Type AgSbSe ₂ . <i>ACS Applied Materials & Interfaces</i> , 2015 , 7, 23047-55	9.5	20
4	Enhanced thermoelectric performance of p-type filled skutterudites via the coherency strain fields from spinodal decomposition. <i>Acta Materialia</i> , 2015 , 98, 405-415	8.4	26
3	Thermoelectric properties of Na-doped Zintl compound: Mg ₃ NiSb ₂ . <i>Acta Materialia</i> , 2015 , 93, 187-193	8.4	91
2	Enhancement of thermoelectric properties by Na doping in Te-free p-type AgSbSe ₂ . <i>Dalton Transactions</i> , 2015 , 44, 1046-51	4.3	25
1	High Thermoelectric Performance of CaMg ₂ Bi ₂ Enabled by Dynamic Doping and Orbital Alignment. <i>Advanced Functional Materials</i> , 2015 , 25, 2200407	15.6	0