Zihang Liu

List of Publications by Citations

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	High thermoelectric cooling performance of n-type MgBi-based materials. *Science*, **2019**, 365, 495-498	33.3	240
68	Advances in thermoelectrics. *Advances in Physics*, **2018**, 67, 69-147	18.4	225
67	Manipulation of ionized impurity scattering for achieving high thermoelectric performance in n-type MgSb-based materials. *Proceedings of the National Academy of Sciences of the United States of America*, **2017**, 114, 10548-10553	11.5	183
66	Discovery of TaFeSb-based half-Heuslers with high thermoelectric performance. *Nature Communications*, **2019**, 10, 270	17.4	155
65	Discovery of ZrCoBi based half Heuslers with high thermoelectric conversion efficiency. *Nature Communications*, **2018**, 9, 2497	17.4	154
64	Size effect in thermoelectric materials. *Npj Quantum Materials*, **2016**, 1,	5	154
63	Grain Boundary Engineering for Achieving High Thermoelectric Performance in n-Type Skutterudites. *Advanced Energy Materials*, **2017**, 7, 1602582	21.8	146
62	Phase-transition temperature suppression to achieve cubic GeTe and high thermoelectric performance by Bi and Mn codoping. *Proceedings of the National Academy of Sciences of the United States of America*, **2018**, 115, 5332-5337	11.5	130
61	Defect Engineering for Realizing High Thermoelectric Performance in n-Type Mg3Sb2-Based Materials. *ACS Energy Letters*, **2017**, 2, 2245-2250	20.1	130
60	Extraordinary thermoelectric performance in n-type manganese doped Mg3Sb2 Zintl: High band degeneracy, tuned carrier scattering mechanism and hierarchical microstructure. *Nano Energy*, **2018**, 52, 246-255	17.1	117
59	Higher thermoelectric performance of Zintl phases (Eu0.5Yb0.5)1-xCaxMg2Bi2 by band engineering and strain fluctuation. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, E4125-32	11.5	109
58	Lithium Doping to Enhance Thermoelectric Performance of MgAgSb with Weak Electron–Phonon Coupling. *Advanced Energy Materials*, **2016**, 6, 1502269	21.8	96
57	High thermoelectric performance of β-MgAgSb for power generation. *Energy and Environmental Science*, **2018**, 11, 23-44	35.4	94
56	Thermoelectric properties of Na-doped Zintl compound: Mg3Na Sb2. *Acta Materialia*, **2015**, 93, 187-193	8.4	91
55	Thermoelectric properties of materials near the band crossing line in Mg2Sn–Mg2Ge–Mg2Si system. *Acta Materialia*, **2016**, 103, 633-642	8.4	85
54	Nano-microstructural control of phonon engineering for thermoelectric energy harvesting. *MRS Bulletin*, **2018**, 43, 181-186	3.2	80
53	Large thermoelectric power factor from crystal symmetry-protected non-bonding orbital in half-Heuslers. *Nature Communications*, **2018**, 9, 1721	17.4	77

52	Demonstration of ultrahigh thermoelectric efficiency of ~7.3% in Mg3Sb2/MgAgSb module for low-temperature energy harvesting. *Joule*, **2021**, 5, 1196-1208	27.8	70
51	Thermoelectric properties of Bi-based Zintl compounds Ca1−xYbxMg2Bi2. *Journal of Materials Chemistry A*, **2016**, 4, 4312-4320	13	69
50	Anomalous electrical conductivity of n-type Te-doped Mg3.2Sb1.5Bi0.5. *Materials Today Physics*, **2017**, 3, 1-6	8	67
49	Tellurium doped n-type Zintl Zr3Ni3Sb4 thermoelectric materials: Balance between carrier-scattering mechanism and bipolar effect. *Materials Today Physics*, **2017**, 2, 54-61	8	56
48	High thermoelectric power factor in CuNi alloy originate from potential barrier scattering of twin boundaries. *Nano Energy*, **2015**, 17, 279-289	17.1	56
47	Enhanced thermoelectric performance of Bi2S3 by synergistical action of bromine substitution and copper nanoparticles. *Nano Energy*, **2015**, 13, 554-562	17.1	55
46	Phonon scattering by nanoscale twin boundaries. *Nano Energy*, **2017**, 32, 174-179	17.1	54
45	Enhancement of thermoelectric performance of phase pure Zintl compounds Ca1−xYb Zn2Sb2, Ca1−xEu Zn2Sb2, and Eu1−xYb Zn2Sb2 by mechanical alloying and hot pressing. *Nano Energy*, **2016**, 25, 136-144	17.1	54
44	Mechanical properties of nanostructured thermoelectric materials −MgAgSb. *Scripta Materialia*, **2017**, 127, 72-75	5.6	50
43	Thermoelectric Properties of n-type ZrNiPb-Based Half-Heuslers. *Chemistry of Materials*, **2017**, 29, 867-872	9.6	48
42	Synergistic coupling of lamellar MoSe2 and SnO2 nanoparticles via chemical bonding at interface for stable and high-power sodium-ion capacitors. *Chemical Engineering Journal*, **2018**, 354, 1164-1173	14.7	48
41	High Power Factor and Enhanced Thermoelectric Performance in Sc and Bi Codoped GeTe: Insights into the Hidden Role of Rhombohedral Distortion Degree. *Advanced Energy Materials*, **2020**, 10, 2002588	21.8	45
40	The effect of nickel doping on electron and phonon transport in the n-type nanostructured thermoelectric material CoSbS. *Journal of Materials Chemistry C*, **2015**, 3, 10442-10450	7.1	40
39	Understanding and manipulating the intrinsic point defect in −MgAgSb for higher thermoelectric performance. *Journal of Materials Chemistry A*, **2016**, 4, 16834-16840	13	39
38	Design of High-Performance Disordered Half-Heusler Thermoelectric Materials Using 18-Electron Rule. *Advanced Functional Materials*, **2019**, 29, 1905044	15.6	38
37	Effects of antimony content in MgAg0.97Sbx on output power and energy conversion efficiency. *Acta Materialia*, **2016**, 102, 17-23	8.4	37
36	The influence of doping sites on achieving higher thermoelectric performance for nanostructured −MgAgSb. *Nano Energy*, **2017**, 31, 194-200	17.1	35
35	Ultrahigh Power Factor in Thermoelectric System NbMFeSb (M = Hf, Zr, and Ti). *Advanced Science*, **2018**, 5, 1800278	13.6	31

34	The microscopic origin of low thermal conductivity for enhanced thermoelectric performance of Yb doped MgAgSb. *Acta Materialia*, **2017**, 128, 227-234	8.4	30
33	Extraordinary Thermoelectric Performance Realized in Hierarchically Structured AgSbSe with Ultralow Thermal Conductivity. *ACS Applied Materials & Interfaces*, **2018**, 10, 18685-18692	9.5	30
32	Understanding the asymmetrical thermoelectric performance for discovering promising thermoelectric materials. *Science Advances*, **2019**, 5, eaav5813	14.3	27
31	Enhanced thermoelectric performance of p -type filled skutterudites via the coherency strain fields from spinodal decomposition. *Acta Materialia*, **2015**, 98, 405-415	8.4	26
30	Thermoelectric performance enhancement of Mg2Sn based solid solutions by band convergence and phonon scattering via Pb and Si/Ge substitution for Sn. *Physical Chemistry Chemical Physics*, **2016**, 18, 20726-37	3.6	26
29	Enhancement of thermoelectric properties by Na doping in Te-free p-type AgSbSe2. *Dalton Transactions*, **2015**, 44, 1046-51	4.3	25
28	Thermoelectric properties of Zintl compound Ca1NaxMg2Bi1.98. *Applied Physics Letters*, **2016**, 108, 183901	3.4	24
27	Self-compensation induced vacancies for significant phonon scattering in InSb. *Nano Energy*, **2018**, 48, 189-196	17.1	23
26	Influence of Carrier Density and Energy Barrier Scattering on a High Seebeck Coefficient and Power Factor in Transparent Thermoelectric Copper Iodide. *ACS Applied Energy Materials*, **2020**, 3, 10037-10044	6.1	21
25	Contrasting the Role of Mg and Ba Doping on the Microstructure and Thermoelectric Properties of p-Type AgSbSe2. *ACS Applied Materials & Interfaces*, **2015**, 7, 23047-55	9.5	20
24	Shaping the role of germanium vacancies in germanium telluride: metastable cubic structure stabilization, band structure modification, and stable N-type conduction. *NPG Asia Materials*, **2020**, 12,	10.3	19
23	High thermoelectric performance of single phase p-type cerium-filled skutterudites by dislocation engineering. *Journal of Materials Chemistry A*, **2018**, 6, 20128-20137	13	15
22	Enhanced thermoelectric and mechanical properties of p-type skutterudites with in situ formed Fe3Si nanoprecipitate. *Inorganic Chemistry Frontiers*, **2017**, 4, 1697-1703	6.8	13
21	Improved thermoelectric performance of GeTe via efficient yttrium doping. *Applied Physics Letters*, **2021**, 118, 033901	3.4	11
20	A material catalogue with glass-like thermal conductivity mediated by crystallographic occupancy for thermoelectric application. *Energy and Environmental Science*, **2021**, 14, 3579-3587	35.4	11
19	Role of phase separation in nanocomposite indium-tin-oxide films for transparent thermoelectric applications. *Journal of Materiomics*, **2021**, 7, 612-620	6.7	10
18	Maximizing the performance of n-type MgBi based materials for room-temperature power generation and thermoelectric cooling.. *Nature Communications*, **2022**, 13, 1120	17.4	10
17	Prediction of improved thermoelectric performance by ordering in double half-Heusler materials. *Journal of Materials Chemistry A*, **2020**, 8, 23590-23598	13	9

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16	New insights into the role of dislocation engineering in N-type filled skutterudite CoSb3. *Journal of Materials Chemistry C*, **2019**, 7, 13622-13631	7.1	9
15	Fresh MoO2 as a better electrode for pseudocapacitive sodium-ion storage. *New Journal of Chemistry*, **2018**, 42, 14721-14724	3.6	7
14	The critical role of boron doping in the thermoelectric and mechanical properties of nanostructured □MgAgSb. *Journal of Materials Chemistry C*, **2018**, 6, 9821-9827	7.1	6
13	Significant off-stoichiometry effect leading to the N-type conduction and ferromagnetic properties in titanium doped Fe2VAl thin films. *Acta Materialia*, **2020**, 200, 848-856	8.4	5
12	Thermoelectric Performance of Cr Doped and Cr-Fe Double-Doped Higher Manganese Silicides with Adjusted Carrier Concentration and Significant Electron-Phonon Interaction. *ACS Applied Materials & Interfaces*, **2021**, 13, 8574-8583	9.5	5
11	Effect of native defects on thermoelectric properties of copper iodide films. *Emergent Materials*, **2021**, 4, 761-768	3.5	4
10	Mediating Point Defects Endows n-Type Bi Te with High Thermoelectric Performance and Superior Mechanical Robustness for Power Generation Application.. *Small*, **2022**, e2201352	11	3
9	Effect of Cd isoelectronic substitution on thermoelectric properties of Zn0.995Na0.005Sb. *Journal of Materiomics*, **2016**, 2, 324-330	6.7	2
8	Nanostructured Bulk Thermoelectric Materials for Energy Harvesting. *NIMS Monographs*, **2022**, 199-231	0.3	1
7	Constructing multi-type defects in In0.1Sb1.9Te3-(MgB2) composites: Simultaneously enhancing the thermoelectric and mechanical properties. *Nano Energy*, **2021**, 90, 106530	17.1	1
6	Nanotwins Strengthening High Thermoelectric Performance Bismuth Antimony Telluride Alloys.. *Advanced Science*, **2022**, e2200432	13.6	1
5	High-performance lead-free cubic GeTe-based thermoelectric alloy. *Cell Reports Physical Science*, **2022**, 100902	6.1	1
4	High Thermoelectric Performance of CaMg 2 Bi 2 Enabled by Dynamic Doping and Orbital Alignment. *Advanced Functional Materials*,2200407	15.6	0
3	Electronic Orbital Alignment and Hierarchical Phonon Scattering Enabling High Thermoelectric Performance p-Type MgSb Zintl Compounds.. *Research*, **2022**, 2022, 9842949	7.8	0
2	Improved thermoelectric and mechanical performance of Sb2Te3 based materials towards the segmented operation. *Materials Today Energy*, **2022**, 101045	7	0
1	Materials for Near-Room Temperatures **2017**, 67-106		