Jun Mao

List of Publications by Year
in descending order

87 papers	7,046 citations	53794 45 h-index	58581 82 g-index
87 all docs	87 docs citations	87 times ranked	3775 citing authors

#	ARTICLE	IF	CITATIONS
1	High thermoelectric cooling performance of n-type Mg ₃ Bi ₂ -based materials. Science, 2019, 365, 495-498.	12.6	457
2	Advances in thermoelectrics. Advances in Physics, 2018, 67, 69-147.	14.4	383
3	Thermoelectric cooling materials. Nature Materials, 2021, 20, 454-461.	27.5	360
4	Tuning the carrier scattering mechanism to effectively improve the thermoelectric properties. Energy and Environmental Science, 2017, 10, 799-807.	30.8	326
5	Recent progress and future challenges on thermoelectric Zintl materials. Materials Today Physics, 2017, 1, 74-95.	6.0	275
6	Manipulation of ionized impurity scattering for achieving high thermoelectric performance in n-type Mg ₃ Sb ₂ -based materials. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 10548-10553.	7.1	267
7	Discovery of ZrCoBi based half Heuslers with high thermoelectric conversion efficiency. Nature Communications, 2018, 9, 2497.	12.8	243
8	Discovery of TaFeSb-based half-Heuslers with high thermoelectric performance. Nature Communications, 2019, 10, 270.	12.8	227
9	Achieving high power factor and output power density in p-type half-Heuslers Nb _{1-x} Ti _x FeSb. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 13576-13581.	7.1	213
10	Studies on thermoelectric figure of merit of Na-doped p-type polycrystalline SnSe. Journal of Materials Chemistry A, 2016, 4, 1848-1854.	10.3	210
11	Size effect in thermoelectric materials. Npj Quantum Materials, 2016, 1, .	5.2	205
12	Deep defect level engineering: a strategy of optimizing the carrier concentration for high thermoelectric performance. Energy and Environmental Science, 2018, 11, 933-940.	30.8	188
13	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.	7.1	183
14	Defect Engineering for Realizing High Thermoelectric Performance in n-Type Mg₃Sb₂-Based Materials. ACS Energy Letters, 2017, 2, 2245-2250.	17.4	181
15	Improved thermoelectric performance of n-type half-Heusler MCo1-xNixSb (MÂ=ÂHf, Zr). Materials Today Physics, 2017, 1, 24-30.	6.0	148
16	High thermoelectric performance of Î±-MgAgSb for power generation. Energy and Environmental Science, 2018, 11, 23-44.	30.8	127
17	Significant Role of Mg Stoichiometry in Designing High Thermoelectric Performance for Mg₃(Sb,Bi)₂-Based n-Type Zintls. Journal of the American Chemical Society, 2018, 140, 1910-1915.	13.7	125
18	Lithium Doping to Enhance Thermoelectric Performance of MgAgSb with Weak Electronâ€"Phonon Coupling. Advanced Energy Materials, 2016, 6, 1502269.	19.5	122

#	Article	IF	Citations
19	Towards tellurium-free thermoelectric modules for power generation from low-grade heat. Nature Communications, 2021, 12, 1121.	12.8	118
20	Nano-microstructural control of phonon engineering for thermoelectric energy harvesting. MRS Bulletin, 2018, 43, 181-186.	3.5	111
21	Large thermoelectric power factor from crystal symmetry-protected non-bonding orbital in half-Heuslers. Nature Communications, 2018, 9, 1721.	12.8	111
22	Thermoelectric properties of materials near the band crossing line in Mg2Snâ€“Mg2Geâ€“Mg2Si system. Acta Materialia, 2016, 103, 633-642.	7.9	104
23	Thermoelectric properties of Bi-based Zintl compounds Ca_{1âˆ’x}Yb_xMg₂Bi₂. Journal of Materials Chemistry A, 2016, 4, 4312-4320.	10.3	92
24	Anomalous electrical conductivity of n-type Te-doped Mg3.2Sb1.5Bi0.5. Materials Today Physics, 2017, 3, 1-6.	6.0	82
25	Significantly enhanced thermoelectric properties of p-type Mg3Sb2 via co-doping of Na and Zn. Acta Materialia, 2018, 143, 265-271.	7.9	82
26	Joint effect of magnesium and yttrium on enhancing thermoelectric properties of n-type Zintl Mg3+Y0.02Sb1.5Bi0.5. Materials Today Physics, 2019, 8, 25-33.	6.0	82
27	High thermoelectric power factor in Cuâ€“Ni alloy originate from potential barrier scattering of twin boundaries. Nano Energy, 2015, 17, 279-289.	16.0	81
28	Design of Highâ€Performance Disordered Halfâ€Heusler Thermoelectric Materials Using 18â€Electron Rule. Advanced Functional Materials, 2019, 29, 1905044.	14.9	81
29	Phonon scattering by nanoscale twin boundaries. Nano Energy, 2017, 32, 174-179.	16.0	77
30	Dilute Cu2Te-alloying enables extraordinary performance of r-GeTe thermoelectrics. Materials Today Physics, 2019, 9, 100096.	6.0	74
31	Mechanical properties of nanostructured thermoelectric materials Î±-MgAgSb. Scripta Materialia, 2017, 127, 72-75.	5.2	72
32	Thermoelectric Properties of n-type ZrNiPb-Based Half-Heuslers. Chemistry of Materials, 2017, 29, 867-872.	6.7	69
33	Enhancement of thermoelectric performance of phase pure Zintl compounds Ca1âˆ’Yb Zn2Sb2, Ca1âˆ’Eu Zn2Sb2, and Eu1âˆ’Yb Zn2Sb2 by mechanical alloying and hot pressing. Nano Energy, 2016, 25, 136-144.	16.0	67
34	Tellurium doped n-type Zintl Zr3Ni3Sb4 thermoelectric materials: Balance between carrier-scattering mechanism and bipolar effect. Materials Today Physics, 2017, 2, 54-61.	6.0	64
35	Reliable N-type Mg3.2Sb1.5Bi0.49Te0.01/304 stainless steel junction for thermoelectric applications. Acta Materialia, 2020, 198, 25-34.	7.9	62
36	N-type Mg3Sb2-Bi with improved thermal stability for thermoelectric power generation. Acta Materialia, 2020, 201, 572-579.	7.9	60

#	Article	IF	Citations
37	Thermoelectric performance of Li doped, p-type Mg2(Ge,Sn) and comparison with Mg2(Si,Sn). Acta Materialia, 2016, 120, 273-280.	7.9	56
38	Thermoelectric properties of n-type half-Heusler compounds (Hf0.25Zr0.75)1â€"Nb NiSn. Acta Materialia, 2016, 113, 41-47.	7.9	54
39	Scalable solution-phase epitaxial growth of symmetry-mismatched heterostructures on two-dimensional crystal soft template. Science Advances, 2016, 2, e1600993.	10.3	52
40	The influence of doping sites on achieving higher thermoelectric performance for nanostructured Î±-MgAgSb. Nano Energy, 2017, 31, 194-200.	16.0	52
41	Understanding the asymmetrical thermoelectric performance for discovering promising thermoelectric materials. Science Advances, 2019, 5, eaav5813.	10.3	52
42	High thermoelectric energy conversion efficiency of a unicouple of n-type Mg3Bi2 and p-type Bi2Te3. Materials Today Physics, 2021, 19, 100413.	6.0	51
43	Understanding and manipulating the intrinsic point defect in Î±-MgAgSb for higher thermoelectric performance. Journal of Materials Chemistry A, 2016, 4, 16834-16840.	10.3	49
44	The microscopic origin of low thermal conductivity for enhanced thermoelectric performance of Yb doped MgAgSb. Acta Materialia, 2017, 128, 227-234.	7.9	49
45	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.	5.5	47
46	Effects of antimony content in MgAg0.97Sbx on output power and energy conversion efficiency. Acta Materialia, 2016, 102, 17-23.	7.9	45
47	Ultrahigh Power Factor in Thermoelectric System Nb_{0.95}M_{0.05}FeSb (M = Hf,) Tj ETQq1 1 0.784314 rgBT /Ov	11.2	45
48	n-Type TaCoSn-Based Half-Heuslers as Promising Thermoelectric Materials. ACS Applied Materials & Interfaces, 2019, 11, 41321-41329.	8.0	44
49	Seeded growth of boron arsenide single crystals with high thermal conductivity. Applied Physics Letters, 2018, 112, .	3.3	43
50	Comparative studies on thermoelectric properties of p-type Mg2Sn0.75Ge0.25 doped with lithium, sodium, and gallium. Acta Materialia, 2017, 141, 154-162.	7.9	40
51	Thermoelectric Properties of Zintl Phase YbMg₂Sb₂. Chemistry of Materials, 2020, 32, 776-784.	6.7	40
52	Study on anisotropy of n-type Mg3Sb2-based thermoelectric materials. Applied Physics Letters, 2018, 112, .	3.3	36
53	Passive Radiative Cooling Enables Improved Performance in Wearable Thermoelectric Generators. Small, 2022, 18, e2106875.	10.0	33
54	Manipulation of Ni Interstitials for Realizing Large Power Factor in TiNiSnâ€Based Materials. Advanced Electronic Materials, 2019, 5, 1900166.	5.1	32

#	Article	IF	Citations
55	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, 20726-20737.	2.8	30
56	Self-compensation induced vacancies for significant phonon scattering in InSb. Nano Energy, 2018, 48, 189-196.	16.0	30
57	Contrasting the Role of Mg and Ba Doping on the Microstructure and Thermoelectric Properties of p-Type AgSbSe₂. ACS Applied Materials & Interfaces, 2015, 7, 23047-23055.	8.0	29
58	Achieving High Thermoelectric Performance by NaSbTe₂ Alloying in GeTe for Simultaneous Suppression of Ge Vacancies and Band Tailoring. Advanced Energy Materials, 2022, 12, .	19.5	28
59	Scalable synthesis of n-type Mg3Sb2-xBix for thermoelectric applications. Materials Today Physics, 2021, 17, 100336.	6.0	27
60	Large reduction of thermal conductivity leading to enhanced thermoelectric performance in p-type Mg₃Bi₂â€“YbMg₂Bi₂ solid solutions. Journal of Materials Chemistry C, 2019, 7, 434-440.	5.5	26
61	N-Type Mg ₃ Sb _{2- <i>x</i>} Bi <i> _x </i> Alloys as Promising Thermoelectric Materials. Research, 2020, 2020, 1219461.	5.7	26
62	Balancing the anionic framework polarity for enhanced thermoelectric performance in YbMg2Sb2 Zintl compounds. Journal of Materiomics, 2019, 5, 583-589.	5.7	25
63	Unsupervised machine learning for discovery of promising half-Heusler thermoelectric materials. Npj Computational Materials, 2022, 8, .	8.7	24
64	Carrier distribution in multi-band materials and its effect on thermoelectric properties. Journal of Materiomics, 2016, 2, 203-211.	5.7	23
65	The effect of charge carrier and doping site on thermoelectric properties of Mg2Sn0.75Ge0.25. Acta Materialia, 2017, 124, 528-535.	7.9	21
66	Suppressed phase transition and enhanced thermoelectric performance in iodine-doped AgCuTe. Nano Energy, 2020, 77, 105297.	16.0	21
67	Intermediate-level doping strategy to simultaneously optimize power factor and phonon thermal conductivity for improving thermoelectric figure of merit. Materials Today Physics, 2020, 15, 100250.	6.0	20
68	Defect Engineering for Realizing p-Type AgBiSe₂ with a Promising Thermoelectric Performance. Chemistry of Materials, 2020, 32, 3528-3536.	6.7	17
69	Stabilizing the Optimal Carrier Concentration in Al/Sb-Codoped GeTe for High Thermoelectric Performance. ACS Applied Materials & Interfaces, 2021, 13, 45717-45725.	8.0	16
70	Tuning the Carrier Scattering Mechanism by Rare-Earth Element Doping for High Average <i>zT</i> in Mg₃Sb₂-Based Compounds. ACS Applied Materials & Interfaces, 2022, 14, 7022-7029.	8.0	16
71	Organic/Inorganic Hybrid Design as a Route for Promoting the Bi_{0.5}Sb_{1.5}Te₃ for Highâ€Performance Thermoelectric Power Generation. Advanced Functional Materials, 2022, 32, .	14.9	13
72	Band Modulation and Strain Fluctuation for Realizing High Average <i>zT</i> in GeTe. Advanced Energy Materials, 2022, 12, .	19.5	13

#	Article	IF	Citations
73	Low contact resistivity and excellent thermal stability of pâ€type YbMg0.8Zn1.2Sb2/Feâ€Sb junction for thermoelectric applications. Acta Materialia, 2022, 235, 118066.	7.9	11
74	Entropy engineering in CaZn2Sb2â€“YbMg2Sb2 Zintl alloys for enhanced thermoelectric performance. Rare Metals, 2022, 41, 2998-3004.	7.1	11
75	Mobility enhancement in heavily doped semiconductors via electron cloaking. Nature Communications, 2022, 13, 2482.	12.8	9
76	Improved Thermoelectric Performance of Tellurium by Alloying with a Small Concentration of Selenium to Decrease Lattice Thermal Conductivity. ACS Applied Materials & Interfaces, 2019, 11, 511-516.	8.0	8
77	Using materials quality factor BÎ”Î•âˆ— for design of thermoelectric materials with multiple bands. Materials Today Physics, 2021, 18, 100371.	6.0	8
78	A sketch for super-thermoelectric materials. Materials Today Physics, 2022, 22, 100618.	6.0	8
79	Filling fraction of Yb in CoSb3 Skutterudite studied by electron microscopy. Applied Physics Letters, 2017, 110, .	3.3	7
80	Infinite coordination polymer for enhancing the thermoelectric performance of Bi0.5Sb1.5Te3 for low-grade waste heat recovery. Materials Today Energy, 2022, 26, 100994.	4.7	7
81	Electronic Topological Transition as a Route to Improve Thermoelectric Performance in Bi_{0.5}Sb_{1.5}Te₃. Advanced Science, 2022, 9, e2105709.	11.2	6
82	Achieving High Thermoelectric Performance in Severely Distorted YbCd₂Sb₂. Advanced Functional Materials, 2022, 32, .	14.9	6
83	Thermodynamic approaches to determine the vacancy concentration in defective Nb1-CoSb half-Heusler thermoelectric materials. Acta Materialia, 2022, 228, 117736.	7.9	5
84	Boosting Total Conversion Efficiency of Hybrid PVT <i>via</i> a Spectral Splitter/Absorber Based on Lossy Periodic Structured Media. Solar Rrl, 0, , .	5.8	3
85	Band convergence and phonon engineering to optimize the thermoelectric performance of CaCd2Sb2. Applied Physics Letters, 2022, 120, .	3.3	2
86	Lead Chalcogenide Thermoelectric Materials. , 2019, , 83-104.		1
87	1-2-2 Layered Zintl-Phase Thermoelectric Materials. , 2019, , 159-175.		0