

# Gangjian Tan

## List of Publications by Citations

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94  
papers

10,865  
citations

39  
h-index

100  
g-index

100  
ext. papers

12,918  
ext. citations

12.4  
avg, IF

6.49  
L-index

#	Paper	IF	Citations
94	Ultralow thermal conductivity and high thermoelectric figure of merit in SnSe crystals. <i>Nature</i> , <b>2014</b> , 508, 373-7	50.4	3074
93	Ultrahigh power factor and thermoelectric performance in hole-doped single-crystal SnSe. <i>Science</i> , <b>2016</b> , 351, 141-4	33.3	1237
92	Rationally Designing High-Performance Bulk Thermoelectric Materials. <i>Chemical Reviews</i> , <b>2016</b> , 116, 12123-12149	68.1	1155
91	High thermoelectric performance of p-type SnTe via a synergistic band engineering and nanostructuring approach. <i>Journal of the American Chemical Society</i> , <b>2014</b> , 136, 7006-17	16.4	425
90	Non-equilibrium processing leads to record high thermoelectric figure of merit in PbTe-SrTe. <i>Nature Communications</i> , <b>2016</b> , 7, 12167	17.4	377
89	Codoping in SnTe: Enhancement of Thermoelectric Performance through Synergy of Resonance Levels and Band Convergence. <i>Journal of the American Chemical Society</i> , <b>2015</b> , 137, 5100-12	16.4	310
88	SnSe: a remarkable new thermoelectric material. <i>Energy and Environmental Science</i> , <b>2016</b> , 9, 3044-3060	35.4	297
87	Valence Band Modification and High Thermoelectric Performance in SnTe Heavily Alloyed with MnTe. <i>Journal of the American Chemical Society</i> , <b>2015</b> , 137, 11507-16	16.4	289
86	Extraordinary role of Hg in enhancing the thermoelectric performance of p-type SnTe. <i>Energy and Environmental Science</i> , <b>2015</b> , 8, 267-277	35.4	279
85	Distinct Impact of Alkali-Ion Doping on Electrical Transport Properties of Thermoelectric p-Type Polycrystalline SnSe. <i>Journal of the American Chemical Society</i> , <b>2016</b> , 138, 8875-82	16.4	243
84	Mechanically Robust BiSbTe Alloys with Superior Thermoelectric Performance: A Case Study of Stable Hierarchical Nanostructured Thermoelectric Materials. <i>Advanced Energy Materials</i> , <b>2015</b> , 5, 1401391	21.8	232
83	Enhanced Thermoelectric Properties in the Counter-Doped SnTe System with Strained Endotaxial SrTe. <i>Journal of the American Chemical Society</i> , <b>2016</b> , 138, 2366-73	16.4	213
82	High Thermoelectric Performance SnTe <sub>1-x</sub> Te <sub>3</sub> Solid Solutions Enabled by Resonant Levels and Strong Vacancy Phonon Scattering. <i>Chemistry of Materials</i> , <b>2015</b> , 27, 7801-7811	9.6	155
81	Integrating Band Structure Engineering with All-Scale Hierarchical Structuring for High Thermoelectric Performance in PbTe System. <i>Advanced Energy Materials</i> , <b>2017</b> , 7, 1601450	21.8	125
80	Enhanced thermoelectric properties of Bi <sub>2</sub> (Te <sub>1-x</sub> Sex) <sub>3</sub> -based compounds as n-type legs for low-temperature power generation. <i>Journal of Materials Chemistry</i> , <b>2012</b> , 22, 20943		122
79	SnTe <sub>1-x</sub> Ag <sub>x</sub> BiTe <sub>2</sub> as an efficient thermoelectric material with low thermal conductivity. <i>Journal of Materials Chemistry A</i> , <b>2014</b> , 2, 20849-20854	13	117
78	High Thermoelectric Performance in Electron-Doped AgBiS with Ultralow Thermal Conductivity. <i>Journal of the American Chemical Society</i> , <b>2017</b> , 139, 6467-6473	16.4	115

77	Concerted Rattling in CsAg <sub>5</sub> Te <sub>3</sub> Leading to Ultralow Thermal Conductivity and High Thermoelectric Performance. <i>Angewandte Chemie - International Edition</i> , <b>2016</b> , 55, 11431-6	16.4	105
76	Multiple Converged Conduction Bands in KBiSe: A Promising Thermoelectric Material with Extremely Low Thermal Conductivity. <i>Journal of the American Chemical Society</i> , <b>2016</b> , 138, 16364-16371	16.4	95
75	Lattice Softening Significantly Reduces Thermal Conductivity and Leads to High Thermoelectric Efficiency. <i>Advanced Materials</i> , <b>2019</b> , 31, e1900108	24	91
74	High Thermoelectric Performance in SnTe/AgSbTe <sub>2</sub> Alloys from Lattice Softening, Giant Phonon Vacancy Scattering, and Valence Band Convergence. <i>ACS Energy Letters</i> , <b>2018</b> , 3, 705-712	20.1	90
73	Subtle Roles of Sb and S in Regulating the Thermoelectric Properties of N-Type PbTe to High Performance. <i>Advanced Energy Materials</i> , <b>2017</b> , 7, 1700099	21.8	88
72	Rapid preparation of CeFe <sub>4</sub> Sb <sub>12</sub> skutterudite by melt spinning: rich nanostructures and high thermoelectric performance. <i>Journal of Materials Chemistry A</i> , <b>2013</b> , 1, 12657	13	85
71	Power generation and thermoelectric cooling enabled by momentum and energy multiband alignments. <i>Science</i> , <b>2021</b> , 373, 556-561	33.3	79
70	Soft phonon modes from off-center Ge atoms lead to ultralow thermal conductivity and superior thermoelectric performance in n-type PbSe <sub>1-x</sub> Te <sub>x</sub> . <i>Energy and Environmental Science</i> , <b>2018</b> , 11, 3220-3230	35.4	75
69	Weak Electron Phonon Coupling and Deep Level Impurity for High Thermoelectric Performance Pb <sub>1-x</sub> GaxTe. <i>Advanced Energy Materials</i> , <b>2018</b> , 8, 1800659	21.8	75
68	Thermoelectric power generation: from new materials to devices. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , <b>2019</b> , 377, 20180450	3	70
67	High Thermoelectric Performance in Supersaturated Solid Solutions and Nanostructured n-Type PbTe <sub>1-x</sub> Te <sub>x</sub> . <i>Advanced Functional Materials</i> , <b>2018</b> , 28, 1801617	15.6	69
66	3D Printing of highly textured bulk thermoelectric materials: mechanically robust BiSbTe alloys with superior performance. <i>Energy and Environmental Science</i> , <b>2019</b> , 12, 3106-3117	35.4	64
65	All-Scale Hierarchically Structured p-Type PbSe Alloys with High Thermoelectric Performance Enabled by Improved Band Degeneracy. <i>Journal of the American Chemical Society</i> , <b>2019</b> , 141, 4480-4486	16.4	62
64	High thermoelectric performance of nonequilibrium synthesized CeFe <sub>4</sub> Sb <sub>12</sub> composite with multi-scaled nanostructures. <i>Applied Physics Letters</i> , <b>2013</b> , 103, 183904	3.4	57
63	Band inversion induced multiple electronic valleys for high thermoelectric performance of SnTe with strong lattice softening. <i>Nano Energy</i> , <b>2020</b> , 69, 104395	17.1	55
62	The Thermoelectric Properties of SnSe Continue to Surprise: Extraordinary Electron and Phonon Transport. <i>Chemistry of Materials</i> , <b>2018</b> , 30, 7355-7367	9.6	52
61	The realization of a high thermoelectric figure of merit in Ge-substituted Zn <sub>4</sub> Sb <sub>3</sub> through band structure modification. <i>Journal of Materials Chemistry</i> , <b>2012</b> , 22, 13977		49
60	Enhancement of Thermoelectric Performance for n-Type PbS through Synergy of Gap State and Fermi Level Pinning. <i>Journal of the American Chemical Society</i> , <b>2019</b> , 141, 6403-6412	16.4	48

59	Enhanced Density-of-States Effective Mass and Strained Endotaxial Nanostructures in Sb-Doped PbCdTe Thermoelectric Alloys. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2019</b> , 11, 9197-9204	9.5	46
58	Thermoelectric transport properties of polycrystalline SnSe alloyed with PbSe. <i>Applied Physics Letters</i> , <b>2017</b> , 110, 053901	3.4	44
57	High Figure of Merit in Gallium-Doped Nanostructured n-Type PbTe-GeTe with Midgap States. <i>Journal of the American Chemical Society</i> , <b>2019</b> , 141, 16169-16177	16.4	44
56	Realization of high thermoelectric performance in p-type unfilled ternary skutterudites FeSb <sub>2+x</sub> Te <sub>1-x</sub> via band structure modification and significant point defect scattering. <i>Acta Materialia</i> , <b>2013</b> , 61, 7693-7704	8.4	39
55	High-Performance PbTe Thermoelectric Films by Scalable and Low-Cost Printing. <i>ACS Energy Letters</i> , <b>2018</b> , 3, 818-822	20.1	38
54	Enhanced thermoelectric performance in zinc substituted p-type filled skutterudites CeFe <sub>4-x</sub> Zn <sub>x</sub> Sb <sub>12</sub> . <i>Journal of Solid State Chemistry</i> , <b>2012</b> , 187, 316-322	3.3	28
53	Toward high thermoelectric performance p-type FeSb <sub>2.2</sub> Te <sub>0.8</sub> via in situ formation of InSb nano-inclusions. <i>Journal of Materials Chemistry C</i> , <b>2015</b> , 3, 8372-8380	7.1	26
52	Hard Radiation Detection from the Selenophosphate Pb <sub>2</sub> P <sub>2</sub> Se <sub>6</sub> . <i>Advanced Functional Materials</i> , <b>2015</b> , 25, 4874-4881	15.6	25
51	Effects of Cobalt Substitution for Fe on the Thermoelectric Properties of p-Type CeFe <sub>4-x</sub> Co <sub>x</sub> Sb <sub>12</sub> Skutterudites. <i>Journal of Electronic Materials</i> , <b>2012</b> , 41, 1147-1152	1.9	23
50	Preparation and thermoelectric properties of p-type filled skutterudites Ce <sub>y</sub> Fe <sub>4-x</sub> Ni <sub>x</sub> Sb <sub>12</sub> . <i>Journal of Alloys and Compounds</i> , <b>2014</b> , 584, 216-221	5.7	22
49	Preparation and thermoelectric properties of Ga-substituted p-type fully filled skutterudites CeFe <sub>4-x</sub> Ga <sub>x</sub> Sb <sub>12</sub> . <i>Journal of Solid State Chemistry</i> , <b>2012</b> , 196, 203-208	3.3	22
48	Enhanced thermoelectric performance in p-type Ca <sub>0.5</sub> Ce <sub>0.5</sub> Fe <sub>4-x</sub> Ni <sub>x</sub> Sb <sub>12</sub> skutterudites by adjusting the carrier concentration. <i>Journal of Alloys and Compounds</i> , <b>2012</b> , 513, 328-333	5.7	22
47	Enhancing Thermoelectric Performance of n-Type PbSe through Forming Solid Solution with PbTe and PbS. <i>ACS Applied Energy Materials</i> , <b>2020</b> , 3, 2-8	6.1	21
46	Lower Thermal Conductivity and Higher Thermoelectric Performance of Fe-Substituted and Ce, Yb Double-Filled p-Type Skutterudites. <i>Journal of Electronic Materials</i> , <b>2013</b> , 42, 1622-1627	1.9	19
45	Thermoelectric Performance Optimization in p-Type Ce <sub>y</sub> Fe <sub>3</sub> CoSb <sub>12</sub> Skutterudites. <i>Journal of Electronic Materials</i> , <b>2014</b> , 43, 1712-1717	1.9	18
44	Thermal Stability of P-Type BiSbTe Alloys Prepared by Melt Spinning and Rapid Sintering. <i>Materials</i> , <b>2017</b> , 10,	3.5	18
43	Lead-free SnTe-based compounds as advanced thermoelectrics. <i>Materials Today Physics</i> , <b>2021</b> , 19, 100405	17	
42	Homologous Series of 2D Chalcogenides Cs-Ag-Bi-Q (Q = S, Se) with Ion-Exchange Properties. <i>Journal of the American Chemical Society</i> , <b>2017</b> , 139, 12601-12609	16.4	16

41	Realizing High Thermoelectric Performance in Sb-Doped AgTe Compounds with a Low-Temperature Monoclinic Structure. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2020</b> , 12, 39425-39433	9.5	16
40	Ultralow Thermal Conductivity and High-Temperature Thermoelectric Performance in n-Type K <sub>2.5</sub> Bi <sub>8.5</sub> Se <sub>14</sub> . <i>Chemistry of Materials</i> , <b>2019</b> , 31, 5943-5952	9.6	15
39	Structures and thermoelectric properties of double-filled (Ca <sub>x</sub> Ce <sub>1-x</sub> )Fe <sub>4</sub> Sb <sub>12</sub> skutterudites. <i>Journal of Solid State Chemistry</i> , <b>2014</b> , 218, 221-229	3.3	15
38	Concerted Rattling in CsAg <sub>5</sub> Te <sub>3</sub> Leading to Ultralow Thermal Conductivity and High Thermoelectric Performance. <i>Angewandte Chemie</i> , <b>2016</b> , 128, 11603-11608	3.6	15
37	The Two-Dimensional ACdBiQ (A = K, Rb, Cs; Q = S, Se): Direct Bandgap Semiconductors and Ion-Exchange Materials. <i>Journal of the American Chemical Society</i> , <b>2017</b> , 139, 6978-6987	16.4	14
36	Ultralow thermal conductivity of BaAg <sub>2</sub> SnSe <sub>4</sub> and the effect of doping by Ga and In. <i>Materials Today Physics</i> , <b>2019</b> , 9, 100098	8	14
35	Correlation of thermoelectric and microstructural properties of p-type CeFe <sub>4</sub> Sb <sub>12</sub> melt-spun ribbons using a rapid screening method. <i>Applied Physics Letters</i> , <b>2011</b> , 98, 142106	3.4	14
34	Optimizing the average power factor of p-type (Na, Ag) co-doped polycrystalline SnSe. <i>RSC Advances</i> , <b>2019</b> , 9, 7115-7122	3.7	12
33	Six Quaternary Chalcogenides of the Pavonite Homologous Series with Ultralow Lattice Thermal Conductivity. <i>Chemistry of Materials</i> , <b>2019</b> , 31, 3430-3439	9.6	12
32	Semiconducting Pavonites CdM <sub>2</sub> Bi <sub>4</sub> Se <sub>8</sub> (M = Sn and Pb) and Their Thermoelectric Properties. <i>Chemistry of Materials</i> , <b>2017</b> , 29, 8494-8503	9.6	11
31	A low-temperature study of manganese-induced ferromagnetism and valence band convergence in tin telluride. <i>Applied Physics Letters</i> , <b>2016</b> , 108, 182101	3.4	11
30	Dissociation of GaSb in n-Type PbTe: off-Centered Gallium Atom and Weak Electron-Phonon Coupling Provide High Thermoelectric Performance. <i>Chemistry of Materials</i> , <b>2021</b> , 33, 1842-1851	9.6	11
29	The New Semiconductor Cs <sub>4</sub> Cu <sub>3</sub> Bi <sub>9</sub> S <sub>17</sub> . <i>Chemistry of Materials</i> , <b>2017</b> , 29, 1744-1751	9.6	10
28	Zhao et al. reply. <i>Nature</i> , <b>2016</b> , 539, E2-E3	50.4	10
27	The new phase [Tl <sub>8</sub> Bi <sub>8</sub> Se <sub>16</sub> ][Sn <sub>8</sub> Bi <sub>8</sub> Se <sub>16</sub> ] a naturally formed semiconducting heterostructure with two-dimensional conductance. <i>Journal of the American Chemical Society</i> , <b>2014</b> , 136, 11079-84	16.4	10
26	High Thermoelectric Figure of Merit of p-Type Ternary Unfilled Skutterudite FeSb <sub>2</sub> Te via Ge Doping. <i>Science of Advanced Materials</i> , <b>2013</b> , 5, 1974-1982	2.3	9
25	An Instant Change of Elastic Lattice Strain during Cu <sub>2</sub> Se Phase Transition: Origin of Abnormal Thermoelectric Properties. <i>Advanced Functional Materials</i> , <b>2021</b> , 31, 2100431	15.6	9
24	Identifying the Origins of High Thermoelectric Performance in Group IIIA Element Doped PbS. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2020</b> , 12, 14203-14212	9.5	8

23	Large effective mass and low lattice thermal conductivity contributing to high thermoelectric performance of Zn-doped Cu <sub>5</sub> Sn <sub>2</sub> Se <sub>7</sub> . <i>Journal of Alloys and Compounds</i> , <b>2020</b> , 826, 154154	5-7	7
22	Impurity states in Mo <sub>1-x</sub> MxSe <sub>2</sub> compounds doped with group VB elements and their electronic and thermal transport properties. <i>Journal of Materials Chemistry C</i> , <b>2020</b> , 8, 619-629	7-1	7
21	One-step ultra-rapid fabrication and thermoelectric properties of CuSe bulk thermoelectric material.. <i>RSC Advances</i> , <b>2019</b> , 9, 10508-10519	3-7	6
20	Ion Beam Induced Artifacts in Lead-Based Chalcogenides. <i>Microscopy and Microanalysis</i> , <b>2019</b> , 25, 831-839.	5	6
19	One-Step Processing of Soft Electrolyte/Metallic Lithium Interface for High-Performance Solid-State Lithium Batteries. <i>ACS Applied Energy Materials</i> , <b>2020</b> , 3, 6139-6145	6-1	6
18	Enhanced Mechanical Properties of NaPbTe/MoTe Thermoelectric Composites Through in-Situ-Formed MoTe. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2019</b> , 11, 41472-41481	9-5	5
17	The electronic-thermal transport properties and the exploration of magneto-thermoelectric properties and the Nernst thermopower of Ag <sub>2</sub> (1+)Se. <i>Journal of Solid State Chemistry</i> , <b>2020</b> , 288, 121453 <sup>3</sup>	3-3	5
16	Transformation of Undesired Li <sub>2</sub> CO <sub>3</sub> into Lithiophilic Layer Via Double Replacement Reaction for Garnet Electrolyte Engineering. <i>Energy and Environmental Materials</i> ,	13	5
15	Quasi-isostructural Alloying of Cu <sub>2</sub> SnSe <sub>3</sub> /Cu <sub>3</sub> SbSe <sub>4</sub> toward Higher Thermoelectric Performance. <i>ACS Applied Energy Materials</i> , <b>2021</b> , 4, 6333-6339	6-1	5
14	Nanostructure-Assisted Phonon Scattering in Lead-Free Thermoelectric Materials: A TEM Investigation of the SnTe System. <i>Microscopy and Microanalysis</i> , <b>2014</b> , 20, 438-439	0-5	4
13	Strategies for boosting thermoelectric performance of PbSe: A review. <i>Chemical Engineering Journal</i> , <b>2021</b> , 133699	14-7	4
12	Chapter 4 All-Scale Hierarchical PbTe <b>2016</b> , 125-158		4
11	In-situ formed nano-pore induced by Ultrasonication boosts the thermoelectric performance of Cu <sub>2</sub> Se compounds. <i>Journal of Alloys and Compounds</i> , <b>2021</b> , 881, 160639	5-7	4
10	Bridging the miscibility gap towards higher thermoelectric performance of PbS. <i>Acta Materialia</i> , <b>2021</b> , 220, 117337	8-4	4
9	X-ray powder reference patterns of the Fe(Sb <sub>2+x</sub> Te <sub>1-x</sub> ) skutterudites for thermoelectric applications. <i>Powder Diffraction</i> , <b>2014</b> , 29, 260-264	1-8	3
8	Boosting Thermoelectric Performance of SnTe by Selective Alloying and Band Tuning. <i>Materials Today Energy</i> , <b>2022</b> , 25, 100958	7	3
7	Strong Anisotropy and Bipolar Conduction-Dominated Thermoelectric Transport Properties in the Polycrystalline Topological Phase of ZrTe. <i>Inorganic Chemistry</i> , <b>2021</b> , 60, 8890-8897	5-1	3
6	Achieving superior performance in thermoelectric Bi <sub>0.4</sub> Sb <sub>1.6</sub> Te <sub>3.72</sub> by enhancing texture and inducing high-density line defects. <i>Science China Materials</i> , <b>2021</b> , 64, 1507-1520	7-1	3

- 5 Ion Beam Induced Artifacts in Lead Based Chalcogenides. *Microscopy and Microanalysis*, **2019**, 25, 2262-2263 1
- 4 Rapid synthesis of garnet-type  $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$  solid electrolyte with superior electrochemical performance. *Journal of the European Ceramic Society*, **2021**, 42, 1568-1568 6 1
- 3 CrTe as a versatile thermoelectromagnetic multi-functional material. *Applied Physics Letters*, **2022**, 120, 023905 3.4 0
- 2 Copper ion chemistry in a new rechargeable all-solid-state copper-ion battery. *Journal of Solid State Chemistry*, **2021**, 298, 122112 3.3 0
- 1 Microstructure Evolution in Nanostructured High-Performance Thermoelectrics: The case of p-type  $\text{Pb}_{1-x}\text{Na}_x\text{Te-SrTe}$ . *Microscopy and Microanalysis*, **2016**, 22, 1268-1269 0.5