High thermal conductivity in cubic boron arsenide crys

Science

361, 579-581

DOI: 10.1126/science.aat8982

#	Article	IF	Citations
1	Point defects and dopants of boron arsenide from first-principles calculations: Donor compensation and doping asymmetry. Applied Physics Letters, 2018, 113, .	1.5	33
2	Ultralow thermal conductivity in a two-dimensional material due to surface-enhanced resonant bonding. Materials Today Physics, 2018, 7, 89-95.	2.9	12
3	Impurity-derived <i>p</i>-type conductivity in cubic boron arsenide. Applied Physics Letters, 2018, 113, .	1.5	39
4	Survey of ab initio phonon thermal transport. Materials Today Physics, 2018, 7, 106-120.	2.9	108
5	Advances in thermoelectrics. Advances in Physics, 2018, 67, 69-147.	35.9	383
6	Thermal-conductivity measurement by time-domain thermoreflectance. MRS Bulletin, 2018, 43, 782-789.	1.7	19
7	High Thermal Conductivity in Isotopically Enriched Cubic Boron Phosphide. Advanced Functional Materials, 2018, 28, 1805116.	7.8	73
8	Antisite Pairs Suppress the Thermal Conductivity of BAs. Physical Review Letters, 2018, 121, 105901.	2.9	41
9	Semiconductor crystals achieve record thermal conductivity. Physics Today, 2018, 71, 19-21.	0.3	2
10	Simultaneously high electron and hole mobilities in cubic boron-V compounds: BP, BAs, and BSb. Physical Review B, 2018, 98, .	1.1	55
11	Ultrahigh thermal conductivity confirmed in boron arsenide. Science, 2018, 361, 549-550.	6.0	42
12	Perspective on <i>ab initio</i> phonon thermal transport. Journal of Applied Physics, 2019, 126, .	1.1	76
13	Anomalously low thermal conductivity in superhard cubic Si3N4. Physical Review B, 2019, 100, .	1.1	5
14	Atomic-Scale Study of Intrinsic Defects Suppressing the Thermal Conductivity of Boron Arsenide. Microscopy and Microanalysis, 2019, 25, 942-943.	0.2	0
15	Revisiting phonon-phonon scattering in single-layer graphene. Physical Review B, 2019, 100, .	1.1	71
16	<i>Ab initio</i> investigation of single-layer high thermal conductivity boron compounds. Physical Review B, 2019, 100, .	1.1	58
17	Ultrahigh thermal isolation across heterogeneously layered two-dimensional materials. Science Advances, 2019, 5, eaax1325.	4.7	149
18	Transparent, Highâ€Thermalâ€Conductivity Ultradrawn Polyethylene/Graphene Nanocomposite Films. Advanced Materials, 2019, 31, e1904348.	11.1	69

#	Article	IF	Citations
19	Thermal expansion coefficients of high thermal conducting BAs and BP materials. Applied Physics Letters, 2019, 115, .	1.5	13
20	Effect of electron-phonon interaction on lattice thermal conductivity of SiGe alloys. Applied Physics Letters, 2019, 115, .	1.5	33
21	Tunable optoelectronic properties in h-BP/h-BAs bilayers: The effect of an external electrical field. Applied Surface Science, 2019, 493, 308-319.	3.1	23
22	Regulated Interfacial Thermal Conductance between Cu and Diamond by a TiC Interlayer for Thermal Management Applications. ACS Applied Materials & Interfaces, 2019, 11, 26507-26517.	4.0	41
23	Phonon interaction with ripples and defects in thin layered molybdenum disulfide. Applied Physics Letters, 2019, 114, .	1.5	10
24	Thermal Expansion Coefficient and Lattice Anharmonicity of Cubic Boron Arsenide. Physical Review Applied, 2019, 11, .	1.5	23
25	Coupling the High-Throughput Property Map to Machine Learning for Predicting Lattice Thermal Conductivity. Chemistry of Materials, 2019, 31, 5145-5151.	3.2	63
26	Thermodynamic calculation and its experimental correlation with the growth process of boron arsenide single crystals. Journal of Applied Physics, 2019, 126, 155108.	1.1	2
27	Basic physical properties of cubic boron arsenide. Applied Physics Letters, 2019, 115, .	1.5	48
28	Role of the electron-phonon coupling on the thermal boundary conductance of metal/diamond interfaces with nanometric interlayers. Journal of Applied Physics, 2019, 126, 165302.	1.1	10
29	First-principle prediction of the electronic property and carrier mobility in boron arsenide nanotubes and nanoribbons. Journal of Applied Physics, 2019, 126, 124303.	1.1	3
30	Effect of boron sources on the growth of boron arsenide single crystals by chemical vapor transport. Applied Physics Letters, 2019, 115, .	1.5	14
31	How to resolve a phonon-associated property into contributions of basic phonon modes. JPhys Materials, 2019, 2, 045005.	1.8	6
32	Generalized Fourier's law for nondiffusive thermal transport: Theory and experiment. Physical Review B, 2019, 100, .	1.1	22
33	Probing the electronic structure of the CoB16â˜' drum complex: Unusual oxidation state of Coâ˜'1. Chinese Journal of Chemical Physics, 2019, 32, 241-247.	0.6	5
34	Electronic structure of BxGa1â˜'xAs alloys using hybrid functionals. Journal of Applied Physics, 2019, 126, .	1.1	10
35	Metal-Level Thermally Conductive yet Soft Graphene Thermal Interface Materials. ACS Nano, 2019, 13, 11561-11571.	7.3	214
36	Band structure and carrier effective masses of boron arsenide: Effects of quasiparticle and spin-orbit coupling corrections. Applied Physics Letters, 2019, 114, .	1.5	46

#	Article	IF	Citations
37	Piezothermic Transduction of Functional Composite Materials. ACS Applied Materials & Interfaces, 2019, 11, 4588-4596.	4.0	13
38	Effects of tensile strain and finite size on thermal conductivity in monolayer WSe₂. Physical Chemistry Chemical Physics, 2019, 21, 468-477.	1.3	60
39	Anisotropic Thermal Boundary Resistance across 2D Black Phosphorus: Experiment and Atomistic Modeling of Interfacial Energy Transport. Advanced Materials, 2019, 31, e1901021.	11.1	26
40	Reduced Graphene Oxide Heterostructured Silver Nanoparticles Significantly Enhanced Thermal Conductivities in Hot-Pressed Electrospun Polyimide Nanocomposites. ACS Applied Materials & Interfaces, 2019, 11, 25465-25473.	4.0	277
41	High thermal conductivity of high-quality monolayer boron nitride and its thermal expansion. Science Advances, 2019, 5, eaav0129.	4.7	308
42	High thermal conductivity in Bi-In-Sn/diamond composites. Scripta Materialia, 2019, 170, 140-144.	2.6	11
43	Simultaneous improvement of thermal conductivities and electromagnetic interference shielding performances in polystyrene composites via constructing interconnection oriented networks based on electrospinning technology. Composites Part A: Applied Science and Manufacturing, 2019, 124, 105484.	3.8	109
44	Materials Discovery and Properties Prediction in Thermal Transport via Materials Informatics: A Mini Review. Nano Letters, 2019, 19, 3387-3395.	4.5	94
45	Optical Properties of In_{2<i>x</i>}Ga_{2â€“2<i>x</i>}O₃ Nanowires Revealed by Photoacoustic Spectroscopy. ACS Applied Materials & Interfaces, 2019, 11, 19260-19266.	4.0	11
46	High-pressure phases of boron arsenide with potential high thermal conductivity. Physical Review B, 2019, 99, .	1.1	15
47	Graphene interlayer for enhanced interface thermal conductance in metal matrix composites: An approach beyond surface metallization and matrix alloying. Carbon, 2019, 150, 60-68.	5.4	53
48	First-principles determination of the ultrahigh electrical and thermal conductivity in free-electron metals via pressure tuning the electron-phonon coupling factor. Physical Review B, 2019, 99, .	1.1	20
49	Nonresistive heat transport by collective phonon flow. Science, 2019, 364, 332-333.	6.0	14
50	Mechanical properties of boron arsenide single crystal. Applied Physics Letters, 2019, 114, .	1.5	31
51	Thermoelectric and magnetic properties of rare earth borides: Boron cluster and layered compounds. Journal of Solid State Chemistry, 2019, 275, 70-82.	1.4	62
52	High Thermal Conductivity in Boron Arsenide: From Prediction to Reality. Angewandte Chemie, 2019, 131, 5882-5889.	1.6	10
53	Phonon thermal conductance across GaN-AlN interfaces from first principles. Physical Review B, 2019, 99, .	1.1	42
54	Non-monotonic pressure dependence of the thermal conductivity of boron arsenide. Nature Communications, 2019, 10, 827.	5.8	42

#	Article	IF	Citations
55	High Thermal Conductivity in Boron Arsenide: From Prediction to Reality. Angewandte Chemie - International Edition, 2019, 58, 5824-5831.	7.2	43
56	Ultrahigh thermal conductivity of carbon allotropes with correlations with the scaled Pugh ratio. Journal of Materials Chemistry A, 2019, 7, 6259-6266.	5.2	23
57	Electronic structure and optical properties of 2D hexagonal Boron Arsenide. , 2019, , .		1
58	Thermal conductivity of crystalline AlN and the influence of atomic-scale defects. Journal of Applied Physics, 2019, 126, .	1.1	75
59	Interfacial Thermal Resistance between Light and Matter. , 2019, , .		0
60	Boron isotope effect on the thermal conductivity of boron arsenide single crystals. Materials Today Physics, 2019, 11, 100169.	2.9	14
61	Ultra-low lattice thermal conductivity of monolayer penta-silicene and penta-germanene. Physical Chemistry Chemical Physics, 2019, 21, 26033-26040.	1.3	48
62	Tree-inspired radially aligned, bimodal graphene frameworks for highly efficient and isotropic thermal transport. Nanoscale, 2019, 11, 21249-21258.	2.8	26
63	Effect of nucleation sites on the growth and quality of single-crystal boron arsenide. Materials Today Physics, 2019, 11, 100160.	2.9	14
64	Spatially resolved thermoreflectance techniques for thermal conductivity measurements from the nanoscale to the mesoscale. Journal of Applied Physics, 2019, 126, .	1.1	30
65	Stronger role of four-phonon scattering than three-phonon scattering in thermal conductivity of III-V semiconductors at room temperature. Physical Review B, 2019, 100, .	1.1	72
66	Modulated thermal conductivity of 2D hexagonal boron arsenide: a strain engineering study. Nanoscale, 2019, 11, 21799-21810.	2.8	43
67	Phonon properties and thermal conductivity from first principles, lattice dynamics, and the Boltzmann transport equation. Journal of Applied Physics, 2019, 125, .	1.1	141
68	Advanced Materials for Highâ€Temperature Thermal Transport. Advanced Functional Materials, 2020, 30, 1904815.	7.8	63
69	Ultrahigh thermal conductivity in isotope-enriched cubic boron nitride. Science, 2020, 367, 555-559.	6.0	177
70	Emerging interface materials for electronics thermal management: experiments, modeling, and new opportunities. Journal of Materials Chemistry C, 2020, 8, 10568-10586.	2.7	99
71	Semiconductor-metal transition in multi-layer sandwiched BAs/BP heterostructures induced by BP intercalation. Applied Surface Science, 2020, 507, 144923.	3.1	10
72	First-principles Modeling of Thermal Transport in Materials: Achievements, Opportunities, and Challenges. International Journal of Thermophysics, 2020, 41, 1.	1.0	30

#	Article	IF	Citations
73	Pressureâ€Dependent Behavior of Defectâ€Modulated Band Structure in Boron Arsenide. Advanced Materials, 2020, 32, e2001942.	11.1	18
74	Interfacial thermal resistance in thermally conductive polymer composites: A review. Composites Communications, 2020, 22, 100518.	3.3	190
75	Anisotropic thermal conductivity and associated heat transport mechanism in roll-to-roll graphene reinforced copper matrix composites. Acta Materialia, 2020, 197, 342-354.	3.8	45
76	Thermal transport properties of two-dimensional materials. , 2020, , 37-55.		0
77	Phononic Thermal Transport in Yttrium Hydrides Allotropes. Frontiers in Materials, 2020, 7, .	1.2	4
78	Thermal conductance enhanced via inelastic phonon transport by atomic vacancies at Cu/Si interfaces. Physical Review B, 2020, 102, .	1.1	19
79	Extended anharmonic collapse of phonon dispersions in SnS and SnSe. Nature Communications, 2020, 11, 4430.	5.8	46
80	High-Pressure Synthesis and Thermal Transport Properties of Polycrystalline BAs_x*. Chinese Physics Letters, 2020, 37, 066202.	1.3	5
81	Framework for analyzing the thermoreflectance spectra of metal thermal transducers with spectrally tunable time-domain thermoreflectance. Journal of Applied Physics, 2020, 128, 055107.	1.1	7
82	Outstanding Thermal Conductivity of Single Atomic Layer Isotope-Modified Boron Nitride. Physical Review Letters, 2020, 125, 085902.	2.9	51
83	Recent Advances in Preparation, Mechanisms, and Applications of Thermally Conductive Polymer Composites: A Review. Journal of Composites Science, 2020, 4, 180.	1.4	53
84	High-Throughput Study of Lattice Thermal Conductivity in Binary Rocksalt and Zinc Blende Compounds Including Higher-Order Anharmonicity. Physical Review X, 2020, 10, .	2.8	55
85	Ray phononics: Thermal guides, emitters, filters, and shields powered by ballistic phonon transport. Materials Today Physics, 2020, 15, 100272.	2.9	26
86	Leverage electron properties to predict phonon properties via transfer learning for semiconductors. Science Advances, 2020, 6, .	4.7	26
87	Extremely low thermal conductivity from bismuth selenohalides with 1D soft crystal structure. Science China Materials, 2020, 63, 1759-1768.	3.5	38
88	Temperature dependent elastic constants and thermodynamic properties of BAs: An <i>ab initio</i> investigation. Journal of Applied Physics, 2020, 127, .	1.1	15
89	Bulk-like Intrinsic Phonon Thermal Conductivity of Micrometer-Thick AlN Films. ACS Applied Materials & Interfaces, 2020, 12, 29443-29450.	4.0	22
90	Flux Growth of Phosphide and Arsenide Crystals. Frontiers in Chemistry, 2020, 8, 186.	1.8	18

#	Article	IF	Citations
91	Factors affecting thermal conductivities of the polymers and polymer composites: A review. Composites Science and Technology, 2020, 193, 108134.	3.8	434
92	Strain and electric field tuned electronic properties of BAs/MoSe2 van der Waals heterostructures for alternative electrodes and photovoltaic cell in photocatalysis. Physica E: Low-Dimensional Systems and Nanostructures, 2020, 120, 114055.	1.3	12
93	Phonon-Phonon Interactions in Strongly Bonded Solids: Selection Rules and Higher-Order Processes. Physical Review X, 2020, 10, .	2.8	43
94	High thermal conductivity driven by the unusual phonon relaxation time platform in 2D monolayer boron arsenide. RSC Advances, 2020, 10, 25305-25310.	1.7	16
95	Thermal boundary conductance between high thermal conductivity boron arsenide and silicon. Journal of Applied Physics, 2020, 127, 055105.	1.1	6
96	Photoluminescence mapping and time-domain thermo-photoluminescence for rapid imaging and measurement of thermal conductivity of boron arsenide. Materials Today Physics, 2020, 13, 100194.	2.9	16
97	Particlelike Phonon Propagation Dominates Ultralow Lattice Thermal Conductivity in Crystalline <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>Tl</mml:mi></mml:mrow><mml:mrow><mml:mn>3</mml:mn></mm Physical Review Letters, 2020, 124, 065901.	2.9	122
98	Phonon hydrodynamics and ultrahighâ€“room-temperature thermal conductivity in thin graphite. Science, 2020, 367, 309-312.	6.0	99
99	Boron-doped IIIâ€“V semiconductors for Si-based optoelectronic devices. Journal of Semiconductors, 2020, 41, 011301.	2.0	12
100	Properties of bulk scandium nitride crystals grown by physical vapor transport. Applied Physics Letters, 2020, 116, .	1.5	8
101	Optical properties of cubic boron arsenide. Applied Physics Letters, 2020, 116, .	1.5	29
102	Observation of strong higher-order lattice anharmonicity in Raman and infrared spectra. Physical Review B, 2020, 101, .	1.1	43
103	Achieving a better heat conductor. Nature Materials, 2020, 19, 482-484.	13.3	10
104	Anomalously Suppressed Thermal Conduction by Electronâ€Phonon Coupling in Chargeâ€Densityâ€Wave Tantalum Disulfide. Advanced Science, 2020, 7, 1902071.	5.6	22
105	Quantitative prediction of grain boundary thermal conductivities from local atomic environments. Nature Communications, 2020, 11, 1854.	5.8	46
106	Specific heat of ternary Agâ€“Siâ€“Ge alloys from 123Â K to high temperatures: experiment and prediction. Journal of Thermal Analysis and Calorimetry, 2021, 145, 2287-2294.	2.0	3
107	Accelerating first-principles estimation of thermal conductivity by machine-learning interatomic potentials: A MTP/ShengBTE solution. Computer Physics Communications, 2021, 258, 107583.	3.0	108
108	The first-principles and BTE investigation of phonon transport in 1T-TiSe₂. Physical Chemistry Chemical Physics, 2021, 23, 1627-1638.	1.3	9

#	Article	IF	Citations
109	Boron carbide amorphous solid with tunable band gap. Journal of Alloys and Compounds, 2021, 861, 157951.	2.8	7
110	Origin of abnormal thermal conductivity in boron III-V compound semiconductors. Wuli Xuebao/Acta Physica Sinica, 2021, 70, 147302-147302.	0.2	0
111	Phonon transport in graphene based materials. Physical Chemistry Chemical Physics, 2021, 23, 26030-26060.	1.3	20
112	<i>Ab initio</i> determination of ultrahigh thermal conductivity in ternary compounds. Physical Review B, 2021, 103, .	1.1	12
113	Heat conduction of electrons and phonons in thermal interface materials. Materials Chemistry Frontiers, 2021, 5, 5617-5638.	3.2	22
114	Beyond homogeneous dispersion: oriented conductive fillers for high<i>Îº</i>nanocomposites. Materials Horizons, 2021, 8, 3009-3042.	6.4	21
115	Activated Lone-Pair Electrons Lead to Low Lattice Thermal Conductivity: A Case Study of Boron Arsenide. SSRN Electronic Journal, 0, , .	0.4	0
116	Effect of isotope disorder on the Raman spectra of cubic boron arsenide. Physical Review Materials, 2021, 5, .	0.9	8
117	Charting lattice thermal conductivity for inorganic crystals and discovering rare earth chalcogenides for thermoelectrics. Energy and Environmental Science, 2021, 14, 3559-3566.	15.6	51
118	Advances in thermal conductivity for energy applications: a review. Progress in Energy, 2021, 3, 012002.	4.6	24
119	Strategies for Manipulating Phonon Transport in Solids. ACS Nano, 2021, 15, 2182-2196.	7.3	22
120	High thermal conductivity in indium-based metal/diamond composites by good wettability of diamond with indium. Diamond and Related Materials, 2021, 112, 108230.	1.8	17
121	Significant Reduction of Interfacial Thermal Resistance and Phonon Scattering in Graphene/Polyimide Thermally Conductive Composite Films for Thermal Management. Research, 2021, 2021, 8438614.	2.8	82
122	Stitching Graphene Sheets with Graphitic Carbon Nitride: Constructing a Highly Thermally Conductive rGO/g-C₃N₄ Film with Excellent Heating Capability. ACS Applied Materials & Interfaces, 2021, 13, 6699-6709.	4.0	32
123	Multiscale Structural Modulation of Anisotropic Graphene Framework for Polymer Composites Achieving Highly Efficient Thermal Energy Management. Advanced Science, 2021, 8, 2003734.	5.6	108
124	Pseudopotential form factors and electronic band structures for AlAs, AlP, BAs, BP, 3C-SiC, and cubic-GaN. Physica Scripta, 2021, 96, 055801.	1.2	2
125	Flexible thermal interface based on self-assembled boron arsenide for high-performance thermal management. Nature Communications, 2021, 12, 1284.	5.8	117
126	The measurement of anisotropic thermal transport using time-resolved magneto-optical Kerr effect. AIP Advances, 2021, 11, 025024.	0.6	3

#	Article	IF	Citations
127	Native point defects from stoichiometry-linked chemical potentials in cubic boron arsenide. Journal of Applied Physics, 2021, 129, 075703.	1.1	2
128	Regulating heat conduction of complex networks by distributed nodes masses. Scientific Reports, 2021, 11, 5501.	1.6	3
129	Transforming heat transfer with thermal metamaterials and devices. Nature Reviews Materials, 2021, 6, 488-507.	23.3	270
130	Phonon-engineered extreme thermal conductivity materials. Nature Materials, 2021, 20, 1188-1202.	13.3	254
131	Ultrahigh Thermal Conductivity of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Î¸</mml:mi></mml:math> -Phase Tantalum Nitride. Physical Review Letters, 2021, 126, 115901.	2.9	46
132	Expanded Inverse-Sandwich Complexes of Lanthanum Borides: La₂B₁₀^{â€“} and La₂B₁₁^{â€“}. Journal of Physical Chemistry A, 2021, 125, 2622-2630.	1.1	15
133	Elastic constants of cubic boron phosphide and boron arsenide. Physical Review Materials, 2021, 5, .	0.9	9
134	High thermal conductivity in covalently bonded bi-layer honeycomb boron arsenide. Materials Today Physics, 2021, 17, 100346.	2.9	15
135	High In-Plane Thermal Conductivity of Aluminum Nitride Thin Films. ACS Nano, 2021, 15, 9588-9599.	7.3	58
136	PEG-filled kapok fiber/sodium alginate aerogel loaded phase change composite material with high thermal conductivity and excellent shape stability. Composites Part A: Applied Science and Manufacturing, 2021, 143, 106279.	3.8	44
137	How dopants limit the ultrahigh thermal conductivity of boron arsenide: a first principles study. Npj Computational Materials, 2021, 7, .	3.5	21
138	Observation of superdiffusive phonon transport in aligned atomic chains. Nature Nanotechnology, 2021, 16, 764-768.	15.6	43
139	Enhanced thermal conductivity in TiC/diamond or Cr3C2/diamond particles modified Bi-In-Sn compounds. Journal of Materials Science: Materials in Electronics, 2021, 32, 13205-13219.	1.1	3
140	Steady-state methods for measuring in-plane thermal conductivity of thin films for heat spreading applications. Review of Scientific Instruments, 2021, 92, 044907.	0.6	6
141	Electric-field-induced modulation of thermal conductivity in poly(vinylidene fluoride). Nano Energy, 2021, 82, 105749.	8.2	45
142	Impact of Electron-Phonon Interaction on Thermal Transport: A Review. Nanoscale and Microscale Thermophysical Engineering, 2021, 25, 73-90.	1.4	22
143	Exploring diamondlike lattice thermal conductivity crystals via feature-based transfer learning. Physical Review Materials, 2021, 5, .	0.9	27
144	Crystal symmetry based selection rules for anharmonic phonon-phonon scattering from a group theory formalism. Physical Review B, 2021, 103, .	1.1	20

#	Article	IF	Citations
145	Electronic structure of cubic boron arsenide probed by scanning tunneling spectroscopy. Journal Physics D: Applied Physics, 2021, 54, 31LT01.	1.3	4
146	Preparation and Energy Storage Research of Metal Chalcogenide Graphene Composite Nanomaterials. Integrated Ferroelectrics, 2021, 216, 136-150.	0.3	0
147	Charge-carrier-mediated lattice softening contributes to high zT in thermoelectric semiconductors. Joule, 2021, 5, 1168-1182.	11.7	37
148	Tunable phononic thermal transport in two-dimensional C6CaC6 via guest atom intercalation. Journal of Applied Physics, 2021, 129, .	1.1	15
149	Isotope effect on the thermal expansion coefficient of atomically thin boron nitride. 2D Materials, 2021, 8, 034006.	2.0	5
150	Integration of boron arsenide cooling substrates into gallium nitride devices. Nature Electronics, 2021, 4, 416-423.	13.1	50
151	The effect of atomistic substitution on thermal transport in large phonon bandgap GaN. Japanese Journal of Applied Physics, 2021, 60, 071003.	0.8	4
152	Exposing the hidden influence of selection rules on phononâ€"phonon scattering by pressure and temperature tuning. Nature Communications, 2021, 12, 3473.	5.8	10
153	Hierarchical molecular design of high-performance infrared nonlinear Ag2HgI4 material by defect engineering strategy. Materials Today Physics, 2021, 19, 100432.	2.9	91
154	Strain-Driven Switchable Thermal Conductivity in Ferroelastic PdSe₂. ACS Applied Materials & Interfaces, 2021, 13, 34724-34731.	4.0	14
155	Effect of Oxygen Impurity on Thermal Conduction Rate of Polycrystalline Si₃N₄. Advanced Engineering Materials, 2021, 23, 2100566.	1.6	1
156	Tailoring Highly Ordered Graphene Framework in Epoxy for High-Performance Polymer-Based Heat Dissipation Plates. ACS Nano, 2021, 15, 12922-12934.	7.3	75
157	High Thermal Conductivity of Wurtzite Boron Arsenide Predicted by Including Four-Phonon Scattering with Machine Learning Potential. ACS Applied Materials & Interfaces, 2021, 13, 53409-53415.	4.0	26
158	Grafting of epoxidized natural rubber chains with BN platelets to obtain flexible and thermally conductive papers. Composites Science and Technology, 2021, 212, 108881.	3.8	20
159	Effects of Impurities on the Thermal and Electrical Transport Properties of Cubic Boron Arsenide. Chemistry of Materials, 2021, 33, 6974-6982.	3.2	19
160	Highâ€Temperature Skin Softening Materials Overcoming the Tradeâ€Off between Thermal Conductivity and Thermal Contact Resistance. Small, 2021, 17, e2102128.	5.2	14
161	Surface-Functionalized Boron Arsenide as a Photocathode for CO2 Reduction. Journal of Physical Chemistry C, 0, , .	1.5	0
162	Computational Revolutions in Lattice Thermal Conductivity. Solid State Phenomena, 0, 324, 181-187.	0.3	0

#	Article	IF	Citations
163	A differential thin film resistance thermometry method for peak thermal conductivity measurements of high thermal conductivity crystals. Review of Scientific Instruments, 2021, 92, 094901.	0.6	3
164	Machine learning for predicting thermal transport properties of solids. Materials Science and Engineering Reports, 2021, 146, 100642.	14.8	36
165	Remarkable suppression of lattice thermal conductivity by electron-phonon scattering in iridium dioxide nanowires. Materials Today Physics, 2021, 21, 100517.	2.9	4
166	Experimental characterization of 3D printed PP/h-BN thermally conductive composites with highly oriented h-BN and the effects of filler size. Composites Part A: Applied Science and Manufacturing, 2021, 150, 106586.	3.8	27
167	FourPhonon: An extension module to ShengBTE for computing four-phonon scattering rates and thermal conductivity. Computer Physics Communications, 2022, 270, 108179.	3.0	145
168	Anisotropic lattice thermal conductivity in topological semimetal ZrGeX (X = S, Se, Te): a first-principles study. Journal of Physics Condensed Matter, 2021, 33, 135401.	0.7	2
169	Ultrathick and highly thermally conductive graphene films by self-fusion. Carbon, 2020, 167, 249-255.	5.4	55
170	Boron arsenide heterostructures: lattice-matched heterointerfaces and strain effects on band alignments and mobility. Npj Computational Materials, 2020, 6, .	3.5	28
171	Why thermal conductivity of CaO is lower than that of CaS: a study from the perspective of phonon splitting of optical mode. Nanotechnology, 2021, 32, 025709.	1.3	13
172	Lattice thermal conductivity of Î² ₁₂ and Ï‡ ₃ borophene*. Chinese Physics B, 2020, 29, 126503.	0.7	24
173	Space-time dependent thermal conductivity in nonlocal thermal transport. Physical Review B, 2020, 102, .	1.1	15
174	Thermal conductivity of GaN, <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mmultiscripts><mml:mi>GaN</mml:mi><mml:mprescripts /><mml:none /><mml:mn>71</mml:mn></mml:mmultiscripts></mml:math> , and SiC from 150 K to 850 K. Physical Review Materials, 2019, 3, .	0.9	74
175	Electronic band structure and optical properties of boron arsenide. Physical Review Materials, 2019, 3, .	0.9	18
176	Finite temperature optoelectronic properties of BAs from first principles. Physical Review Materials, 2019, 3, .	0.9	13
177	Impact of Aging on Mechanical Properties of Thermally Conductive Gap Fillers. Journal of Electronic Packaging, Transactions of the ASME, 2020, 142, .	1.2	3
178	Direct and indirect optical absorptions of cubic BAs and BSb. Optics Express, 2020, 28, 238.	1.7	13
179	Giant Thermal Transport Tuning at a Metal/Ferroelectric Interface. Advanced Materials, 2022, 34, e2105778.	11.1	13
181	Enhance the thermal conductivity and maintain insulation property of epoxy via constructing a three-dimensional network by doping hexagonal boron nitride and carbon nanofiber. Journal of Materials Science: Materials in Electronics, 2021, 32, 28840-28855.	1.1	2

#	Article	IF	Citations
182	Modeling heat transport in nanocomposites through multiple length scales. , 2020, , 127-153.		0
183	Thermal Interface Materials with Both High Through-Plane Thermal Conductivity and Excellent Elastic Compliance. Chemistry of Materials, 2021, 33, 8926-8937.	3.2	38
184	Anisotropic thermal conductivity of the nanoparticles embedded GaSb thin film semiconductor. Nanotechnology, 2021, 32, 035702.	1.3	4
185	Stronger three-phonon interactions revealed by molecular dynamics in materials with restricted phase space. Journal of Applied Physics, 2021, 130, .	1.1	4
186	Thermal management of electronics and thermoelectric power generation from waste heat enabled by flexible Kevlar@SiC thermal conductive materials with liquid-crystalline orientation. Energy Conversion and Management, 2022, 251, 114957.	4.4	19
187	Efficient Calculation of the Lattice Thermal Conductivity by Atomistic Simulations with Ab Initio Accuracy. Advanced Theory and Simulations, 2022, 5, .	1.3	14
188	Thermal conductivity prediction by atomistic simulation methods: Recent advances and detailed comparison. Journal of Applied Physics, 2021, 130, .	1.1	36
189	Dislocation-Limited Thermal Conductivity in LiF: Revisiting Perturbative Models. Jom, 0, , 1.	0.9	1
190	Invariant expansion of the 30-band <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>k</mml:mi><mml:mo>Â·</mml:mo><mml:mi>p</mml:mi... model and its parameters for III-V compounds. Physical Review B, 2022, 105, .	1.1	3
191	Abnormal enhancement of thermal conductivity by planar structure: A comparative study of graphene-like materials. International Journal of Thermal Sciences, 2022, 174, 107438.	2.6	14
192	Role of Grain Size on Magnon and Phonon Thermal Transport in the Spin Ladder Compound Ca₉La₅Cu₂₄O₄₁. ACS Applied Electronic Materials, 2022, 4, 787-794.	2.0	4
193	Liquid film boiling enabled ultra-high conductance and high flux heat spreaders. Cell Reports Physical Science, 2022, 3, 100746.	2.8	5
194	Research progress of polymers with high thermal conductivity. Wuli Xuebao/Acta Physica Sinica, 2022, 71, 023601.	0.2	2
195	Review of thermal transport in phononic crystals. Materials Today Physics, 2022, 22, 100613.	2.9	39
196	Perspective on thermal conductance across heterogeneously integrated interfaces for wide and ultrawide bandgap electronics. Applied Physics Letters, 2022, 120, .	1.5	14
197	Research progress in interface modification and thermal conduction behavior of diamond/metal composites. International Journal of Minerals, Metallurgy and Materials, 2022, 29, 200-211.	2.4	20
198	Recent progress on cubic boron arsenide with ultrahigh thermal conductivity. Journal of Applied Physics, 2022, 131, .	1.1	5
199	A novel three-dimensional boron phosphide network for thermal management of epoxy composites. Composites Part B: Engineering, 2022, 233, 109662.	5.9	16

#	Article	IF	Citations
200	Highly thermally conductive Ti3C2Tx/h-BN hybrid films via coulombic assembly for electromagnetic interference shielding. Journal of Colloid and Interface Science, 2022, 613, 488-498.	5.0	31
201	Nanotwinning induced decreased lattice thermal conductivity of high temperature thermoelectric boron subphosphide (B12P2) from deep learning potential simulations. Energy and AI, 2022, 8, 100135.	5.8	4
202	Superhydrophobic nanocomposites of erbium oxide and reduced graphene oxide for high-performance microwave absorption. Journal of Colloid and Interface Science, 2022, 615, 69-78.	5.0	14
203	Elastic stiffening induces one-dimensional phonons in thin Ta2Se3 nanowires. Applied Physics Letters, 2022, 120, .	1.5	4
204	Boron materials for energy applications. , 2022, , 203-289.		1
205	Finite-momentum excitons and the role of electronâ€"phonon couplings in the electronic and phonon transport properties of boron arsenide. Physical Chemistry Chemical Physics, 2022, 24, 9384-9393.	1.3	2
206	Atomic-scale probing of heterointerface phonon bridges in nitride semiconductor. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	3.3	16
207	Giant Isotope Effect of Thermal Conductivity in Silicon Nanowires. Physical Review Letters, 2022, 128, 085901.	2.9	16
208	A van der Waals Ferroelectric Tunnel Junction for Ultrahighâ€Temperature Operation Memory. Small Methods, 2022, 6, e2101583.	4.6	22
209	Four-Phonon Scattering Effect and Two-Channel Thermal Transport in Two-Dimensional Paraelectric SnSe. ACS Applied Materials & Interfaces, 2022, 14, 11493-11499.	4.0	25
210	Accurate description of high-order phonon anharmonicity and lattice thermal conductivity from molecular dynamics simulations with machine learning potential. Physical Review B, 2022, 105, .	1.1	45
211	Scale-invariant machine-learning model accelerates the discovery of quaternary chalcogenides with ultralow lattice thermal conductivity. Npj Computational Materials, 2022, 8, .	3.5	18
212	Improved Thermal and Electromagnetic Shielding of PEEK Composites by Hydroxylating PEK-C Grafted MWCNTs. Polymers, 2022, 14, 1328.	2.0	2
213	Mechanical strength and band alignment of BAs/GaN heterojunction polar interfaces: A first-principles calculation study. Physical Review Materials, 2022, 6, .	0.9	2
214	Strong four-phonon scattering in monolayer and hydrogenated bilayer BAs with horizontal mirror symmetry. Applied Physics Letters, 2022, 120, .	1.5	30
215	Ultralow Thermal Conductivity of Highly Dense ZrW₂O₈ Ceramics with Negative Thermal Expansion. Advanced Engineering Materials, 2022, 24, .	1.6	3
216	Effect of transport agent boron triiodide on the synthesis and crystal quality of boron arsenide. International Journal of Minerals, Metallurgy and Materials, 2022, 29, 662-670.	2.4	2
217	Ultrahigh Energy-Dissipation Thermal Interface Materials through Anneal-Induced Disentanglement. , 2022, 4, 874-881.		16

#	Article	IF	Citations
218	High-performance cellulose nanofiber-derived composite films for efficient thermal management of flexible electronic devices. Chemical Engineering Journal, 2022, 439, 135675.	6.6	26
219	Graphene-Based Composite Membrane Prepared from Solid Carbon Source Catalyzed by Ni Nanoparticles. Nanomaterials, 2021, 11, 3392.	1.9	3
220	Reversible sweat cooling on mobile electronic devices by metal-organic frameworks-based moisture sorption-desorption process. Materials Today Nano, 2022, 18, 100198.	2.3	7
221	<i>Ab initio</i> phonon transport across grain boundaries in graphene using machine learning based on small dataset. Physical Review Materials, 2022, 6, .	0.9	0
222	Bilateral phonon transport modulation of Bi-layer TMDCs (MX2, M=Mo, W; X=S). International Journal of Thermal Sciences, 2022, 179, 107669.	2.6	1
223	Ultraweak electron-phonon coupling strength in cubic boron arsenide unveiled by ultrafast dynamics. Physical Review B, 2022, 105, .	1.1	8
224	High Power Efficiency Nitrides Thermoelectric Device. SSRN Electronic Journal, 0, , .	0.4	0
225	Peak thermal conductivity measurements of boron arsenide crystals. Physical Review Materials, 2022, 6, .	0.9	2
226	Recent advances in thermally conductive polymer composites. High Performance Polymers, 2022, 34, 1081-1101.	0.8	4
227	Theoretical design of BAs/WX2 (XÂ=ÂS, Se) heterostructures for high-performance photovoltaic applications from DFT calculations. Applied Surface Science, 2022, 599, 153865.	3.1	5
228	Heat Conductorâ€"Insulator Transition in Electrochemically Controlled Hybrid Superlattices. Nano Letters, 2022, 22, 5443-5450.	4.5	10
229	Realizing high thermoelectric performance in eco-friendly Bi2S3 with nanopores and Cl-doping through shape-controlled nano precursors. Nano Energy, 2022, 100, 107478.	8.2	19
230	Insulating materials for realising carbon neutrality: Opportunities, remaining issues and challenges. High Voltage, 2022, 7, 610-632.	2.7	85
231	Enhancing the anti-oxidation stability of vapor-crystallized arsenic crystals via introducing iodine. Journal of Hazardous Materials, 2022, 439, 129573.	6.5	1
232	High power efficiency nitrides thermoelectric device. Nano Energy, 2022, 101, 107568.	8.2	4
233	Thermal Conductivity of BAs under Pressure. Advanced Electronic Materials, 2022, 8, .	2.6	5
234	High ambipolar mobility in cubic boron arsenide. Science, 2022, 377, 437-440.	6.0	44
235	The influence of boron nitride shape and size on thermal conductivity, rheological and passive cooling properties of polyethylene composites. Composites Part A: Applied Science and Manufacturing, 2022, 161, 107117.	3.8	16

#	Article	IF	Citations
236	High ambipolar mobility in cubic boron arsenide revealed by transient reflectivity microscopy. Science, 2022, 377, 433-436.	6.0	34
237	On functional boron nitride: Electronic structures and thermal properties. , 2022, 2, 100005.		7
238	Many-body Green's function approach to lattice thermal transport. Physical Review B, 2022, 106, .	1.1	25
240	Flexible epoxyâ€dispersed liquid crystal membranes of intrinsic thermal conductivity with high voltage orientation molding. Journal of Applied Polymer Science, 2022, 139, .	1.3	4
241	BOLTZMANN TRANSPORT EQUATION FOR THERMAL TRANSPORT IN ELECTRONIC MATERIALS AND DEVICES. Annual Review of Heat Transfer, 2022, 24, 131-172.	0.3	2
242	Four-phonon and electronâ€"phonon scattering effects on thermal properties in two-dimensional 2H-TaS₂. Nanoscale, 2022, 14, 13053-13058.	2.8	8
243	Defect-modulated thermal transport behavior of BAs under high pressure. Applied Physics Letters, 2022, 121, .	1.5	1
244	Softened <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>s</mml:mi><mml:msup><mml:mrow><mml:mi>p</mm bonding network leads to strong anharmonicity and weak hydrodynamics in graphene+. Physical Review B, 2022, 106, .	1.1	12
245	First-principles prediction of the lattice thermal conductivity of two-dimensional (2D) h-BX (Xâ€‰=â€‰P, As,) Tj ETQq0 0 0 rgBT /Overl 132, .	1.1	10
246	Machine Learning for Harnessing Thermal Energy: From Materials Discovery to System Optimization. ACS Energy Letters, 2022, 7, 3204-3226.	8.8	11
247	An optimized smearing scheming for first Brillouin zone sampling and its application on thermal conductivity prediction of graphite. Chinese Physics B, 0, , .	0.7	0
248	Leveraging Low-Fidelity Data to Improve Machine Learning of Sparse High-Fidelity Thermal Conductivity Data via Transfer Learning. Materials Today Physics, 2022, , 100868.	2.9	2
249	Emerging theory and phenomena in thermal conduction: A selective review. Science China: Physics, Mechanics and Astronomy, 2022, 65, .	2.0	37
250	Thermoelectric Materials. , 2022, , .		0
251	Realizing ultra-low thermal conductivity by strong synergy of asymmetric geometry and electronic structure in boron nitride and arsenide. Rare Metals, 2023, 42, 210-221.	3.6	3
252	Persistent hot carrier diffusion in boron arsenide single crystals imaged by ultrafast electron microscopy. Matter, 2023, 6, 206-216.	5.0	5
253	Glucose-Assisted Exfoliation of Hexagonal Boron Nitride Nanosheets and Modification with Hyperbranched Polymers for Thermally Conductive Epoxy Composites: Implications for Thermal Management. ACS Applied Nano Materials, 2022, 5, 16315-16324.	2.4	9
254	Realizing ultrahigh thermal conductivity in bimodal-diamond/Al composites via interface engineering. Materials Today Physics, 2022, 28, 100901.	2.9	6

#	Article	IF	Citations
255	Ex-situ modification of lattice thermal transport through coherent and incoherent heat baths. Materials Today Physics, 2022, 29, 100884.	2.9	0
256	Thermal percolation network in alumina based composites. Wuli Xuebao/Acta Physica Sinica, 2023, .	0.2	0
257	Direct Evidence on Effect of Oxygen Dissolution on Thermal and Electrical Conductivity of AlN Ceramics Using Al Solid-State NMR Analysis. Materials, 2022, 15, 8125.	1.3	1
258	First-principles study on the lattice thermal conductivity of layered Dirac semimetal BeN<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si29.svg" display="inline" id="d1e625"><mml:msub><mml:mrow /><mml:mrow><mml:mn>4</mml:mn></mml:mrow></mml:msub></mml:math>. Physica E: Low-Dimensional Systems and Nanostructures, 2023, 147, 115571.	1.3	4
259	Manipulation of the thermal conductivity for two-phase WC-Ni composites through a microstructure-based model along with key experiments. Journal of Materials Research and Technology, 2023, 22, 895-912.	2.6	5
260	Thermal management and waste heat recovery of electronics enabled by highly thermoconductive aramid composites with bridge-type 1D/2D liquid-crystalline thermal conduction networks. Energy Conversion and Management, 2023, 276, 116603.	4.4	2
261	Output energy distribution potential enabled by a nanofluid-assisted hybrid generator. Energy, 2023, 265, 126348.	4.5	0
262	High thermal conductivity in wafer-scale cubic silicon carbide crystals. Nature Communications, 2022, 13, .	5.8	25
263	An Efficient Strategy for Searching High Lattice Thermal Conductivity Materials. ACS Applied Energy Materials, 2022, 5, 15356-15364.	2.5	8
264	Anomalous thermal transport under high pressure in boron arsenide. Nature, 2022, 612, 459-464.	13.7	25
265	Ultralow Interfacial Thermal Resistance of Graphene Thermal Interface Materials with Surface Metal Liquefaction. Nano-Micro Letters, 2023, 15, .	14.4	21
266	Thermal percolation network in alumina based thermal conductive polymer. Wuli Xuebao/Acta Physica Sinica, 2023, 72, 024401.	0.2	0
267	Tunable liquidâ€“solid hybrid thermal metamaterials with a topology transition. Proceedings of the National Academy of Sciences of the United States of America, 2023, 120, .	3.3	28
268	Effects of phonon bandgap on phonon-phonon scattering in ultrahigh thermal conductivity <i>Î¸</i>-phase TaN. Chinese Physics B, 0, , .	0.7	0
269	Activated Lone-Pair Electrons Lead to Low Lattice Thermal Conductivity: A Case Study of Boron Arsenide. Journal of Physical Chemistry Letters, 2023, 14, 139-147.	2.1	2
270	Thermally conductive fillers. , 2023, , 111-147.		0
271	The magic of III-Vs. , 2023, , .		1
272	Thermal properties of tungsten/tungsten carbide-coated double-size diamond/copper composite. Diamond and Related Materials, 2023, 135, 109818.	1.8	4

#	Article	IF	Citations
273	Tunable power conversion efficiency and excellent infrared absorption of BAs/WSe2 vdW heterostructures with different stacking modes. Materials Science in Semiconductor Processing, 2023, 160, 107407.	1.9	0
274	Preparation of Hexagonal Boron Nitride-Containing Foam with Improved Thermal Conductivity of Epoxy Resins. ACS Applied Polymer Materials, 2023, 5, 1786-1796.	2.0	9
275	Highâ€Pressure Synthesis and Thermal Conductivity of Semimetallic Î¸â€Tantalum Nitride. Advanced Functional Materials, 2023, 33, .	7.8	3
276	High-frequency phonons drive large phonon-drag thermopower in semiconductors at high carrier density. Physical Review B, 2023, 107, .	1.1	2
277	Solid-state thermal rectification of bilayers by asymmetric elastic modulus. Materials Horizons, 2023, 10, 1431-1439.	6.4	1
278	çº³ç±³åºåº¦ç·åŒ–ç¡¼çš„è¶…å§æ‰ä¼¸å¼¹æ€§. Science China Materials, 2023, 66, 1675-1680.	3.5	0
279	Ultra-sharp-Line Emission in Isotopic c-¹⁰BP. Journal of Physical Chemistry C, 2023, 127, 4636-4642.	1.5	1
280	Anharmonic phonon renormalization and two-channel thermal transport in SrTiO3 using full temperature-dependent interatomic force constant. Physics Letters, Section A: General, Atomic and Solid State Physics, 2023, 467, 128727.	0.9	0
281	Enhanced thermal properties of epoxy composites by constructing thermal conduction networks with low content of three-dimensional graphene. Nanotechnology, 2023, 34, 235708.	1.3	1
282	Millimeter-Sized Monoisotopic Cubic ¹⁰Boron Phosphide. Crystal Growth and Design, 2023, 23, 2812-2817.	1.4	1
283	Anharmonic phonon behavior via irreducible derivatives: Self-consistent perturbation theory and molecular dynamics. Physical Review B, 2023, 107, .	1.1	1
284	Nearâ€Theoretical Thermal Conductivity Silver Nanoflakes as Reinforcements in Gapâ€Filling Adhesives. Advanced Materials, 2023, 35, .	11.1	7
285	Vertical Array of Graphite Oxide Liquid Crystal by Microwire Shearing for Highly Thermally Conductive Composites. Advanced Materials, 2023, 35, .	11.1	22
286	Structural Design and Research Progress of Thermally Conductive Polyimide Film â€" A Review. Macromolecular Rapid Communications, 2023, 44, .	2.0	3
287	Competition between phonon-vacancy and four-phonon scattering in cubic boron arsenide by machine learning interatomic potential. Physical Review Materials, 2023, 7, .	0.9	2
288	Spinâ€"Orbit-Coupling-Induced Topological Transition and Anomalously Strong Intervalley Scattering in Two-Dimensional Bismuth Allotropes with Enhanced Thermoelectric Performances. ACS Applied Materials & Interfaces, 2023, 15, 19545-19559.	4.0	1
289	Predicting lattice thermal conductivity of semiconductors from atomic-information-enhanced CGCNN combined with transfer learning. Applied Physics Letters, 2023, 122, 152106.	1.5	0
306	Phonon engineering significantly reducing thermal conductivity of thermoelectric materials: a review. Rare Metals, 2023, 42, 2825-2839.	3.6	6

#	Article	IF	Citations
322	Giant thermal rectification efficiency by geometrically enhanced asymmetric non-linear radiation. Materials Horizons, 0, , .	6.4	0
327	2D III-V semiconductors. Semiconductors and Semimetals, 2023, , 101-144.	0.4	0
328	Quantifying spectral thermal transport properties in framework of molecular dynamics simulations: a comprehensive review. Rare Metals, 2023, 42, 3914-3944.	3.6	5