Thermoelectric and structural characterizations of individual electrodeposited bismuth telluride nanowires

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#	Paper	IF	Citations
143	Lower limit to the lattice thermal conductivity of nanostructured Bi2Te3-based materials. *Journal of Applied Physics*, **2009**, 106, 073503	2.5	78
142	Thermoelectric Material Electroplating: a Historical Review. **2010**, 39, 1818-1827		95
141	High Seebeck Coefficient BiSbTe Nanowires. **2010**, 13, P15		6
140	Thermal conductivity prediction and analysis of few-quintuple Bi2Te3 thin films: A molecular dynamics study. *Applied Physics Letters*, **2010**, 97, 183107	3.4	55
139	Semimetal nanowires and their superlattices in anodic alumina membranes. **2010**, 4, 181-93		
138	High-Throughput Measurement of the Seebeck Coefficient and the Electrical Conductivity of Lithographically Patterned Polycrystalline PbTe Nanowires. **2010**, 1, 3004-3011		20
137	Ultra-long bismuth telluride nanoribbons synthesis by lithographically patterned galvanic displacement. **2010**, 20, 9982		22
136	Lattice thermal conductivity reduction in Bi2Te3 quantum wires with smooth and rough surfaces: A molecular dynamics study. *Physical Review B*, **2011**, 83,	3.3	61
135	Enhanced thermoelectric figure of merit in SiGe alloy nanowires by boundary and hole-phonon scattering. *Journal of Applied Physics*, **2011**, 110, 074317	2.5	55
134	Predicting Thermal Transport in Bi2Te3: From Bulk to Nanostructures. **2011**, 1329, 1		
133	Enhancement of the thermoelectric properties in nanoscale and nanostructured materials. **2011**, 21, 4037-4055		275
132	Thermal transport in individual thermoelectric nanowires: a review. **2011**, 15, 375-385		17
131	Thermoelectric Performance Enhancement by Surrounding Crystalline Semiconductors with Metallic Nanoparticles. **2011**,		2
130	Pulsed electrodeposition of Bi2Te3 and Bi2Te3/Te nanowire arrays from a DMSO solution. **2011**, 58, 510-515		13
129	Measurement of the intrinsic thermal conductivity of a multiwalled carbon nanotube and its contact thermal resistance with the substrate. **2011**, 7, 2334-40		67
128	Thermoelectric Nanostructures: From Physical Model Systems towards Nanograined Composites. **2011**, 1, 713-731		193
127	On errors in thermal conductivity measurements of suspended and supported nanowires using micro-thermometer devices from low to high temperatures. **2011**, 22, 015103		40

126	Influence of surface modification on thermoelectric properties of Bi2Te3 nanowires. **2011**,		
125	Steering and collimating ballistic electrons with amphoteric refraction. *Journal of Applied Physics*, **2012**, 112, 024318	2.5	
124	Electrochemical Deposition of Bi2(Te,Se)3Nanowire Arrays on Si. **2012**, 159, D235-D239		14
123	Microchips and Methods for the Characterization of Thermoelectric Transport Properties of Nanostructures. **2012**, 1-26		
122	Semiconductor nanowires for thermoelectrics. **2012**, 22, 22821		43
121	Thermal and Thermoelectric Transport in Nanostructures and Low-Dimensional Systems. **2012**, 16, 79-116		108
120	Nanostructured thermoelectric materials: Current research and future challenge. **2012**, 22, 535-549		485
119	Tuning the Geometrical and Crystallographic Characteristics of Bi2Te3 Nanowires by Electrodeposition in Ion-Track Membranes. **2012**, 116, 5367-5375		32
118	Thermal transport in graphene. **2012**, 152, 1321-1330		142
117	Conductive scanning probe microscopy of nanostructured Bi2Te3. *Nanoscale*, **2012**, 4, 600-6	7.7	7
116	Molecular dynamics simulations of lattice thermal conductivity and spectral phonon mean free path of PbTe: Bulk and nanostructures. **2012**, 53, 278-285		133
115	Combined effect of nanoscale grain size and porosity on lattice thermal conductivity of bismuth-telluride-based bulk alloys. *Journal of Applied Physics*, **2012**, 112, 084315	2.5	65
114	Diameter and composition modulated bismuth telluride nanowires by galvanic displacement reaction of segmented NiFe nanowires. **2012**, 75, 201-207		9
113	Fabrication of Bi2Te3 nanowire arrays and thermal conductivity measurement by 3ω scanning thermal microscopy. *Journal of Applied Physics*, **2013**, 113, 054308	2.5	51
112	A comprehensive study of thermoelectric and transport properties of β silicon carbide nanowires. *Journal of Applied Physics*, **2013**, 114, 184301	2.5	21
111	Thermoelectric characterization of bismuth telluride nanowires, synthesized via catalytic growth and post-annealing. **2013**, 25, 239-44		73
110	Thermoelectricity in semiconductor nanowires. **2013**, 7, 767-780		24
109	Effects of surface band bending and scattering on thermoelectric transport in suspended bismuth telluride nanoplates. **2013**, 13, 5316-22		106

108	Thermoelectric power factor of ternary single-crystalline Sb2Te3- and Bi2Te3-based nanowires. *Nanotechnology*, **2013**, 24, 495402	3.4	36
107	Effect of nanostructuration on the thermal conductivity of thermoelectric materials. **2013**,		1
106	Phase transformation and thermoelectric properties of bismuth-telluride nanowires. *Nanoscale*, **2013**, 5, 4669-72	7.7	54
105	Nanoengineering thermoelectrics for 21st century: Energy harvesting and other trends in the field. **2013**, 24, 288-305		208
104	Preparation and electrical transport properties of nanostructured Sb2Se3 films fabricated by combining spin-coating and gas-induced reduction. **2013**, 15, 1		12
103	Large Seebeck Coefficients of Fe2TiSn and Fe2TiSi: First-Principles Study. **2013**, 6, 025504		59
102	Mode-Wise Thermal Conductivity of Bismuth Telluride. **2013**, 135,		40
101	Effects of (Al,Ge) double doping on the thermoelectric properties of higher manganese silicides. *Journal of Applied Physics*, **2013**, 114, 173705	2.5	37
100	Optimized thermoelectric performance of Bi2Te3 nanowires. **2013**, 1, 6831		30
99	Improving Bi2Te3-based thermoelectric nanowire microstructure via thermal processing. **2014**, 29, 182-189		7
98	The effect of a distinct diameter variation on the thermoelectric properties of individual Bi0.39Te0.61nanowires. **2014**, 29, 124006		22
97	Electrochemical synthesis of highly ordered nanowires with a rectangular cross section using an in-plane nanochannel array. *Nanotechnology*, **2014**, 25, 504002	3.4	7
96	The influence of a Te-depleted surface on the thermoelectric transport properties of Bi□Te□ nanowires. *Nanotechnology*, **2014**, 25, 365401	3.4	10
95	Nanoscale thermal transport. II. 2003□2012. **2014**, 1, 011305		1050
94	Thermal and electronic transport of semiconducting nanoparticle-functionalized carbon nanotubes. *Carbon*, **2014**, 69, 46-54	10.4	20
93	25th anniversary article: semiconductor nanowires--synthesis, characterization, and applications. **2014**, 26, 2137-84		649
92	Nanoscale Thermoelectrics. *Lecture Notes in Nanoscale Science and Technology*, **2014**,	0.3	15
91	A modified sol-gel technique for pore size control in porous aluminum oxide nanowire templates. *ACS Applied Materials & Interfaces*, **2014**, 6, 20122-9	9.5	13

90	Tailoring bismuth telluride nanostructures using a scalable sintering process and their thermoelectric properties. **2014**, 16, 7956-7962		17
89	Twin-driven thermoelectric figure-of-merit enhancement of Bi2Te3 nanowires. *Nanoscale*, **2014**, 6, 6158-65	7.7	52
88	Magnetothermopower and magnetoresistance of single Co-Ni/Cu multilayered nanowires. *Physical Review B*, **2014**, 90,	3.3	46
87	Thermopower detection of single nanowire using a MEMS device. **2014**, 51, 470-475		3
86	Thermoelectric Properties of Band Structure Engineered Topological Insulator (Bi1−xSbx)2Te3 Nanowires. **2015**, 5, 1500280		20
85	Measuring Techniques for Thermal Conductivity and Thermoelectric Figure of Merit of V-VI Compound Thin Films and Nanowires. **2015**, 223-252		1
84	Individual thermoelectric properties of electrodeposited bismuth telluride nanowires in polycarbonate membranes. **2015**, 161, 403-407		13
83	Prospects for thermoelectricity in quantum dot hybrid arrays. **2015**, 10, 997-1001		51
82	Facile hydrothermal synthesis and formation mechanisms of Bi2Te3, Sb2Te3 and Bi2Te3–Sb2Te3 nanowires. **2015**, 5, 100309-100315		14
81	Thermoelectric performance of classical topological insulator nanowires. **2015**, 30, 015015		34
80	Temperature-dependent thermoelectric properties of individual silver nanowires. *Physical Review B* , **2015**, 91,	3.3	59
79	Dielectrophoretic investigation of Bi-Te-nanowires-a microfabricated thermoelectric characterization platform for measuring the thermoelectric and structural properties of single nanowires. *Nanotechnology*, **2015**, 26, 125707	3.4	6
78	Ab initio calculations of ideal and defective bismuth telluride nanotubes. **2015**, 252, 517-520		1
77	Thermoelectric Properties of Indium(III)-Doped Copper Antimony Selenide Thin Films Deposited Using a Microwave-Assisted Technique. **2016**, 4, 835-842		20
76	Ultra-high resolution steady-state micro-thermometry using a bipolar direct current reversal technique. **2016**, 87, 094901		2
75	Measurement of thermal conductivity of Bi2Te3 nanowire using high-vacuum scanning thermal wave microscopy. *Applied Physics Letters*, **2016**, 108, 071907	3.4	8
74	Thermoelectric properties of semiconductor nanowire networks. *Journal of Applied Physics*, **2016**, 119, 125107	2.5	4
73	Assessing the thermoelectric properties of single InSb nanowires: the role of thermal contact resistance. **2016**, 31, 064001		13

72	Measuring methods for thermoelectric properties of one-dimensional nanostructural materials. **2016**, 6, 48933-48961		12
71	Surface effects on thermoelectric properties of metallic and semiconducting nanowires. **2016**, 213, 557-570		4
70	Semiconductor Nanowires for Energy Harvesting. *Semiconductors and Semimetals*, **2016**, 94, 297-368	0.6	4
69	The surface-to-volume ratio: a key parameter in the thermoelectric transport of topological insulator Bi2Se3 nanowires. *Nanoscale*, **2016**, 8, 13552-7	7.7	21
68	Thermoelectric properties of solution-synthesized n-type Bi2Te3 nanocomposites modulated by Se: An experimental and theoretical study. **2016**, 9, 117-127		30
67	Effects of doping and planar defects on the thermoelectric properties of InAs nanowires. **2016**, 6, 7791-7797		7
66	Electrodeposition of textured Bi27Sb28Te45 nanowires with enhanced electrical conductivity. **2016** , 173, 438-445		3
65	A T-type method for characterization of the thermoelectric performance of an individual free-standing single crystal Bi2S3 nanowire. *Nanoscale*, **2016**, 8, 2704-10	7.7	35
64	Thermoelectric nanowires: A brief prospective. **2016**, 111, 54-57		40
63	Physisorbed versus chemisorbed oxygen effect on thermoelectric properties of highly organized single walled carbon nanotube nanofilms. **2017**, 7, 14078-14087		13
62	Nanostructured Thermoelectric Materials: Current Research and Future Challenges. **2017**, 507-546		1
61	Thermal conductivity of BiTe nanowires: how size affects phonon scattering. *Nanoscale*, **2017**, 9, 6741-6747	7.7	30
60	Evolution of Microstructural Disorder in Annealed Bismuth Telluride Nanowires. **2017**, 6, N3117-N3124		3
59	Effects of Mass Fluctuation on Thermal Transport Properties in Bulk Bi2Te3. **2017**, 46, 2797-2806		5
58	Experimental Studies of Thermal Transport in Nanostructures. **2017**, 319-357		0
57	Perfect quintuple layer Bi2Te3 nanowires: Growth and thermoelectric properties. *APL Materials*, **2017**, 5, 086110	5.7	2
56	Topological insulators for thermoelectrics. **2017**, 2,		90
55	Thermosize potentials in semiconductors. **2017**, 381, 2704-2708		5

54	Monolithic Bi1.5Sb0.5Te3 ternary alloys with a periodic 3D nanostructure for enhancing thermoelectric performance. **2017**, 5, 8974-8980		25
53	Patent Basics Every Researcher and Engineer Should Know. **2017**, 480-495		
52	Robust broad spectral photodetection (UV-NIR) and ultra high responsivity investigated in nanosheets and nanowires of BiTe under harsh nano-milling conditions. **2017**, 7, 17911		45
51	Improvement of Seebeck coefficient in as-grown Bi2Te3-ySey electrodeposited films by the addition of additives and bath optimization. **2018**, 269, 490-498		4
50	Development of a TEM Compatible Nanowire Characterization Platform With Self-Forming Contacts. **2018**, 31, 22-31		2
49	Observation of a low temperature n-p transition in individual titania nanotubes. *Nanoscale*, **2018**, 10, 3863-3870	7.7	9
48	Phase-dependent thermal conductivity of electrodeposited antimony telluride films. **2018**, 6, 3410-3416		4
47	Experimental characterization methods for thermal contact resistance: A review. **2018**, 130, 1530-1548		46
46	Structural and thermoelectric properties of Se doped In2Te3 thin films. *AIP Advances*, **2018**, 8, 115015	1.5	2
45	Physical origin of inertness of Ta contacts on Bi2Te3. *Journal of Applied Physics*, **2018**, 124, 185106	2.5	2
44	Bi nanowires modified by 400 keV and 1 MeV Au ions. *AIP Advances*, **2018**, 8, 125103	1.5	2
43	Manipulating thermal and electronic transports in thermoelectric Bi2Te3 nanowires by porphyrin adsorption. *AIP Advances*, **2018**, 8, 105010	1.5	4
42	Growth of epitaxial FeGe□hanocrystals with incommensurate Nowotny chimney-ladder phase on Si substrate. *Japanese Journal of Applied Physics*, **2018**, 57, 08NB01	1.4	4
41	Measurement of the Thermoelectric Properties of Individual Nanostructures. *Semiconductors and Semimetals*, **2018**, 98, 409-444	0.6	8
40	Temperature-dependent Thermoelectric Properties of Electrodeposited Antimony Telluride Films upon Thermal Annealing. **2018**,		1
39	Nanoscale self-assembly of thermoelectric materials: a review of chemistry-based approaches. *Nanotechnology*, **2018**, 29, 432001	3.4	36
38	Nanowires for heat conversion. *Journal Physics D: Applied Physics*, **2018**, 51, 353001	3	22
37	Enhanced thermoelectric efficiency in topological insulator Bi2Te3 nanoplates via atomic layer deposition-based surface passivation. *Applied Physics Letters*, **2018**, 113, 083904	3.4	12

36	Electrodeposition of V-VI Nanowires and Their Thermoelectric Properties. *Frontiers in Chemistry*, **2019**, 7, 516	5	9
35	Nanowire forest of pnictogen-chalcogenide alloys for thermoelectricity. *Nanoscale*, **2019**, 11, 13423-13430	7.7	2
34	Capturing anharmonic and anisotropic natures in the thermotics and mechanics of Bi2Te3 thermoelectric material through an accurate and efficient potential. *Journal Physics D: Applied Physics*, **2019**, 52, 425303	3	5
33	Development of interatomic potentials for the complex binary compound Sb2Te3 and the prediction of thermal conductivity. *Physical Review B*, **2019**, 99,	3.3	2
32	Thermoelectrics of Nanowires. *Chemical Reviews*, **2019**, 119, 9260-9302	68.1	64
31	Single silicon nanowires as inherent heaters and thermometers for thermal conductivity measurements. *AIP Advances*, **2019**, 9, 015107	1.5	4
30	Enhanced thermoelectric performance in single-crystal-like semiconducting flexible GaAs films. *APL Materials*, **2019**, 7, 031104	5.7	2
29	Phonon transport and thermoelectric properties of semiconducting BiTeX (X = S, Se, Te) monolayers. *Physical Chemistry Chemical Physics*, **2019**, 21, 5679-5688	3.6	34
28	Thermal conductivity suppression in GaAs-AlAs core-shell nanowire arrays. *Nanoscale*, **2019**, 11, 20507-20513	7.7	7
27	Thermodynamic properties of SnO2/GaAs core/shell nanofiber. *Physica A: Statistical Mechanics and Its Applications*, **2020**, 560, 125104	3.3	5
26	Focused ion beam deposited carbon-platinum nanowires for cryogenic resistive thermometry. *Carbon*, **2020**, 169, 482-487	10.4	1
25	A review on advanced carbon-based thermal interface materials for electronic devices. *Carbon*, **2020**, 168, 65-112	10.4	43
24	Bipolar Thermoelectrical Transport of SnSe Nanoplate in Low Temperature*. *Chinese Physics Letters*, **2020**, 37, 017301	1.8	4
23	Heat transport with phonon–electron energy exchange in Bi2Te3 circular thin layers. *Journal of Applied Physics*, **2020**, 127, 064301	2.5	
22	Review of experimental approaches for improving zT of thermoelectric materials. *Materials Science in Semiconductor Processing*, **2021**, 121, 105303	4.3	40
21	Phonon- and electron-temperature waves in a Maxwell-Cattaneo heat-conduction theory. *Journal of Thermal Stresses*, **2021**, 44, 1-19	2.2	3
20	Direct mapping of temperature-difference-induced potential variation under non-thermal equilibrium. *Applied Physics Letters*, **2021**, 118, 091605	3.4	0
19	The optimized electrochemical deposition of bismuth-bismuth telluride layered crystal structures. *IOP Conference Series: Materials Science and Engineering*, **2021**, 1140, 012016	0.4	1

18	Bottom-Up Engineering Strategies for High-Performance Thermoelectric Materials. *Nano-Micro Letters*, **2021**, 13, 119	19.5	15
17	Development of microdevices for the in-plane thermoelectric characterization of deposited films. *Journal of Materials Research and Technology*, **2021**, 15, 1190-1200	5.5	
16	Prediction of BiTe-SbTe Interfacial Conductance and Superlattice Thermal Conductivity Using Molecular Dynamics Simulations. *ACS Applied Materials & Interfaces*, **2021**, 13, 4636-4642	9.5	2
15	One-Dimensional Bi-Based Nanostructures for Thermoelectrics. *Lecture Notes in Nanoscale Science and Technology*, **2014**, 237-254	0.3	2
14	Electrochemistry of bismuth interlayers in (Bi2)m(Bi2Te3)n superlattice. *Journal of Solid State Electrochemistry*, 1	2.6	
13	Quantitative Method to Measure Thermal Conductivity of One-Dimensional Nanostructures Based on Scanning Thermal Wave Microscopy. *Transactions of the Korean Society of Mechanical Engineers, B*, **2014**, 38, 957-962	0.5	
12	Thermal Properties of Inorganic Nanostructures. *Series in Materials Science and Engineering*, **2016**, 247-267		
11	Fabrication and Characterization of PLD-Grown Bismuth Telluride (Bi₂Te₃) and Antimony Telluride (Sb₂Te₃) Thermoelectric Devices. *Journal of Electronics Cooling and Thermal Control*, **2017**, 07, 63-77	0.5	1
10	Effects of topological band structure on thermoelectric transport of bismuthene. *Physical Review B*, **2021**, 104,	3.3	1
9	Novel method for convenient Seebeck coefficient measurements on individual Si nanowires. *Journal of Applied Physics*, **2020**, 128, 185108	2.5	
8	High ZT in p-type thermoelectric (Bi,Sb)2Te3 with built-in nanopores. *Energy and Environmental Science*,	35.4	6
7	Durable, stretchable and washable inorganic-based woven thermoelectric textiles for power generation and solid-state cooling. *Energy and Environmental Science*,	35.4	5
6	Thermal conductivity of materials under pressure. *Nature Reviews Physics*,	23.6	5
5	Suppressed atomic diffusion in flash sintering of bismuth telluride. *Journal of the European Ceramic Society*, **2022**,	6	0
4	Comprehensive Review on Thermoelectric Electrodeposits: Enhancing Thermoelectric Performance Through Nanoengineering.. *Frontiers in Chemistry*, **2021**, 9, 762896	5	3
3	Thermoelectric Properties of an Individual Suspended Single-Crystalline Sb2Se3 Nanowire. *Journal of Thermal Science*,	1.9	0
2	Selective Dissolution-Derived Nanoporous Design of Impurity-Free Bi 2 Te 3 Alloys with High Thermoelectric Performance. 2205202		0
1	High-Performance Industrial-Grade p-Type (Bi,Sb) 2 Te 3 Thermoelectric Enabled by a Stepwise Optimization Strategy.		0