Haijun Wu

List of Publications by Citations

124 papers	9,274 citations	50 h-index	95 g-index
130 ext. papers	11,512 ext. citations	14.1 avg, IF	6.27 L-index

#	Paper	IF	Citations
124	All-scale hierarchical thermoelectrics: MgTe in PbTe facilitates valence band convergence and suppresses bipolar thermal transport for high performance. *Energy and Environmental Science*, **2013**, 6, 3346	35.4	532
123	Hollow Mo-doped CoP nanoarrays for efficient overall water splitting. *Nano Energy*, **2018**, 48, 73-80	17.1	418
122	Broad temperature plateau for thermoelectric figure of merit ZT>2 in phase-separated PbTe0.7S0.3. *Nature Communications*, **2014**, 5, 4515	17.4	373
121	Hollow Co O Nanosphere Embedded in Carbon Arrays for Stable and Flexible Solid-State Zinc-Air Batteries. *Advanced Materials*, **2017**, 29, 1704117	24	325
120	The structural origin of enhanced piezoelectric performance and stability in lead free ceramics. *Energy and Environmental Science*, **2017**, 10, 528-537	35.4	305
119	Tuning Multiscale Microstructures to Enhance Thermoelectric Performance of n-Type Bismuth-Telluride-Based Solid Solutions. *Advanced Energy Materials*, **2015**, 5, 1500411	21.8	287
118	Defect Engineering of Oxygen-Deficient Manganese Oxide to Achieve High-Performing Aqueous Zinc Ion Battery. *Advanced Energy Materials*, **2019**, 9, 1803815	21.8	285
117	Texturation boosts the thermoelectric performance of BiCuSeO oxyselenides. *Energy and Environmental Science*, **2013**, 6, 2916	35.4	273
116	Origin of the high performance in GeTe-based thermoelectric materials upon Bi2Te3 doping. *Journal of the American Chemical Society*, **2014**, 136, 11412-9	16.4	259
115	High thermoelectric performance realized in a BiCuSeO system by improving carrier mobility through 3D modulation doping. *Journal of the American Chemical Society*, **2014**, 136, 13902-8	16.4	253
114	Single Co Atoms Anchored in Porous N-Doped Carbon for Efficient Zinc–Air Battery Cathodes. *ACS Catalysis*, **2018**, 8, 8961-8969	13.1	250
113	Giant Piezoelectricity and High Curie Temperature in Nanostructured Alkali Niobate Lead-Free Piezoceramics through Phase Coexistence. *Journal of the American Chemical Society*, **2016**, 138, 15459-15464	16.4	241
112	High thermoelectric performance in low-cost SnSSe crystals. *Science*, **2019**, 365, 1418-1424	33.3	233
111	Microstructure basis for strong piezoelectricity in Pb-free Ba(Zr0.2Ti0.8)O3-(Ba0.7Ca0.3)TiO3 ceramics. *Applied Physics Letters*, **2011**, 99, 092901	3.4	215
110	Enhanced Thermoelectric Properties in the Counter-Doped SnTe System with Strained Endotaxial SrTe. *Journal of the American Chemical Society*, **2016**, 138, 2366-73	16.4	213
109	Synergistically optimized electrical and thermal transport properties of SnTe via alloying high-solubility MnTe. *Energy and Environmental Science*, **2015**, 8, 3298-3312	35.4	209
108	Cactus-Like NiCoP/NiCo-OH 3D Architecture with Tunable Composition for High-Performance Electrochemical Capacitors. *Advanced Functional Materials*, **2018**, 28, 1800036	15.6	206

107	Sulfur-doped cobalt phosphide nanotube arrays for highly stable hybrid supercapacitor. *Nano Energy*, **2017**, 39, 162-171	17.1	202
106	Metal-organic framework derived hollow CoS nanotube arrays: an efficient bifunctional electrocatalyst for overall water splitting. *Nanoscale Horizons*, **2017**, 2, 342-348	10.8	189
105	Remarkable Roles of Cu To Synergistically Optimize Phonon and Carrier Transport in n-Type PbTe-CuTe. *Journal of the American Chemical Society*, **2017**, 139, 18732-18738	16.4	179
104	Large piezoelectricity and dielectric permittivity in BaTiO 3 -xBaSnO 3 system: The role of phase coexisting. *Europhysics Letters*, **2012**, 98, 27008	1.6	162
103	Ultrahigh Performance in Lead-Free Piezoceramics Utilizing a Relaxor Slush Polar State with Multiphase Coexistence. *Journal of the American Chemical Society*, **2019**, 141, 13987-13994	16.4	152
102	Realizing high performance n-type PbTe by synergistically optimizing effective mass and carrier mobility and suppressing bipolar thermal conductivity. *Energy and Environmental Science*, **2018**, 11, 2486-2495	35.4	129
101	Strong enhancement of phonon scattering through nanoscale grains in lead sulfide thermoelectrics. *NPG Asia Materials*, **2014**, 6, e108-e108	10.3	119
100	Extraordinary thermoelectric performance in n-type manganese doped Mg3Sb2 Zintl: High band degeneracy, tuned carrier scattering mechanism and hierarchical microstructure. *Nano Energy*, **2018** , 52, 246-255	17.1	117
99	Role of sodium doping in lead chalcogenide thermoelectrics. *Journal of the American Chemical Society*, **2013**, 135, 4624-7	16.4	111
98	Enhancing the Figure of Merit of Heavy-Band Thermoelectric Materials Through Hierarchical Phonon Scattering. *Advanced Science*, **2016**, 3, 1600035	13.6	106
97	Practical High Piezoelectricity in Barium Titanate Ceramics Utilizing Multiphase Convergence with Broad Structural Flexibility. *Journal of the American Chemical Society*, **2018**, 140, 15252-15260	16.4	105
96	Entropy Engineering of SnTe: Multi-Principal-Element Alloying Leading to Ultralow Lattice Thermal Conductivity and State-of-the-Art Thermoelectric Performance. *Advanced Energy Materials*, **2018**, 8, 1802116	21.8	100
95	Epitaxial Ferroelectric Hf0.5Zr0.5O2 Thin Films and Their Implementations in Memristors for Brain-Inspired Computing. *Advanced Functional Materials*, **2018**, 28, 1806037	15.6	98
94	Thermoelectric SnTe with Band Convergence, Dense Dislocations, and Interstitials through Sn Self-Compensation and Mn Alloying. *Small*, **2018**, 14, e1802615	11	96
93	Attaining high mid-temperature performance in (Bi,Sb)2Te3 thermoelectric materials via synergistic optimization. *NPG Asia Materials*, **2016**, 8, e302-e302	10.3	96
92	Multiple Converged Conduction Bands in KBiSe: A Promising Thermoelectric Material with Extremely Low Thermal Conductivity. *Journal of the American Chemical Society*, **2016**, 138, 16364-16371	16.4	95
91	Realizing High Thermoelectric Performance in p-Type SnSe through Crystal Structure Modification. *Journal of the American Chemical Society*, **2019**, 141, 1141-1149	16.4	91
90	Simultaneously enhancing the power factor and reducing the thermal conductivity of SnTe via introducing its analogues. *Energy and Environmental Science*, **2017**, 10, 2420-2431	35.4	89

89	Enhanced thermoelectric performance of PbTe bulk materials with figure of merit zT >2 by multi-functional alloying. *Journal of Materiomics*, **2016**, 2, 141-149	6.7	89
88	Mg vacancy and dislocation strains as strong phonon scatterers in Mg 2 Si 1 Sb x thermoelectric materials. *Nano Energy*, **2017**, 34, 428-436	17.1	85
87	Significantly Enhanced Thermoelectric Performance in n-type Heterogeneous BiAgSeS Composites. *Advanced Functional Materials*, **2014**, 24, 7763-7771	15.6	74
86	Band Sharpening and Band Alignment Enable High Quality Factor to Enhance Thermoelectric Performance in -Type PbS. *Journal of the American Chemical Society*, **2020**, 142, 4051-4060	16.4	71
85	Lattice-mismatch-induced twinning for seeded growth of anisotropic nanostructures. *ACS Nano*, **2015**, 9, 3307-13	16.7	69
84	Advanced electron microscopy for thermoelectric materials. *Nano Energy*, **2015**, 13, 626-650	17.1	67
83	Adaptive ferroelectric state at morphotropic phase boundary: Coexisting tetragonal and rhombohedral phases. *Acta Materialia*, **2014**, 71, 176-184	8.4	66
82	Synergistically optimizing interdependent thermoelectric parameters of n-type PbSe through alloying CdSe. *Energy and Environmental Science*, **2019**, 12, 1969-1978	35.4	63
81	Strain glass transition in a multifunctional type Ti alloy. *Scientific Reports*, **2014**, 4, 3995	4.9	59
80	High thermoelectric performance in n-type BiAgSeS due to intrinsically low thermal conductivity. *Energy and Environmental Science*, **2013**, 6, 1750	35.4	59
79	Enhancing Thermoelectric Performance of n-Type Hot Deformed Bismuth-Telluride-Based Solid Solutions by Nonstoichiometry-Mediated Intrinsic Point Defects. *ACS Applied Materials & Interfaces*, **2017**, 9, 28577-28585	9.5	55
78	Metal organic framework-derived integrated nanoarrays for overall water splitting. *Journal of Materials Chemistry A*, **2018**, 6, 9009-9018	13	54
77	Intrinsically Low Thermal Conductivity in BiSbSe3: A Promising Thermoelectric Material with Multiple Conduction Bands. *Advanced Functional Materials*, **2019**, 29, 1806558	15.6	53
76	Ultrahigh Average Realized in p-Type SnSe Crystalline Thermoelectrics through Producing Extrinsic Vacancies. *Journal of the American Chemical Society*, **2020**, 142, 5901-5909	16.4	51
75	Synergistic Compositional Mechanical Thermal Effects Leading to a Record High zT in n-Type V2VI3 Alloys Through Progressive Hot Deformation. *Advanced Functional Materials*, **2018**, 28, 1803617	15.6	50
74	(Ni,Co)Se /NiCo-LDH Core/Shell Structural Electrode with the Cactus-Like (Ni,Co)Se Core for Asymmetric Supercapacitors. *Small*, **2019**, 15, e1803895	11	50
73	Twinned Tungsten Carbonitride Nanocrystals Boost Hydrogen Evolution Activity and Stability. *Small*, **2019**, 15, e1900248	11	44
72	Strain stabilized nickel hydroxide nanoribbons for efficient water splitting. *Energy and Environmental Science*, **2020**, 13, 229-237	35.4	43

71	Strategy to optimize the overall thermoelectric properties of SnTe via compositing with its property-counter CuInTe2. *Acta Materialia*, **2017**, 125, 542-549	8.4	41
70	Extremely Low Thermal Conductivity in Thermoelectric Ge0.55Pb0.45Te Solid Solutions via Se Substitution. *Chemistry of Materials*, **2016**, 28, 6367-6373	9.6	39
69	High-performance potassium sodium niobate piezoceramics for ultrasonic transducer. *Nano Energy*, **2020**, 70, 104559	17.1	37
68	Microstructure at morphotropic phase boundary in Pb(Mg1/3Nb2/3)O3-PbTiO3 ceramic: Coexistence of nano-scaled {110}-type rhombohedral twin and {110}-type tetragonal twin. *Journal of Applied Physics*, **2012**, 112, 052004	2.5	36
67	Amphoteric Indium Enables Carrier Engineering to Enhance the Power Factor and Thermoelectric Performance in n-Type AgnPb100InnTe100+2n (LIST). *Advanced Energy Materials*, **2019**, 9, 1900414	21.8	34
66	Giant piezoelectricity in oxide thin films with nanopillar structure. *Science*, **2020**, 369, 292-297	33.3	34
65	Single-Atom Tungsten-Doped CoP Nanoarrays as a High-Efficiency pH-Universal Catalyst for Hydrogen Evolution Reaction. *ACS Sustainable Chemistry and Engineering*, **2020**, 8, 14825-14832	8.3	32
64	Microstructural Origins of High Piezoelectric Performance: A Pathway to Practical Lead-Free Materials. *Advanced Functional Materials*, **2019**, 29, 1902911	15.6	30
63	Simultaneous Boost of Power Factor and Figure-of-Merit in In-Cu Codoped SnTe. *Small*, **2019**, 15, e1902493	13	29
62	Enhanced Thermoelectric and Mechanical Properties in Yb0.3Co4Sb12 with In Situ Formed CoSi Nanoprecipitates. *Advanced Energy Materials*, **2019**, 9, 1902435	21.8	29
61	Materializing efficient methanol oxidation via electron delocalization in nickel hydroxide nanoribbon. *Nature Communications*, **2020**, 11, 4647	17.4	29
60	Open hollow CoPt clusters embedded in carbon nanoflake arrays for highly efficient alkaline water splitting. *Journal of Materials Chemistry A*, **2018**, 6, 20214-20223	13	29
59	The Role of ElectronPhonon Interaction in Heavily Doped Fine-Grained Bulk Silicons as Thermoelectric Materials. *Advanced Electronic Materials*, **2016**, 2, 1600171	6.4	28
58	Nanoscale Topotactic Phase Transformation in SrFeO Epitaxial Thin Films for High-Density Resistive Switching Memory. *Advanced Materials*, **2019**, 31, e1903679	24	27
57	PN co-doping induced structural recovery of TiO 2 for overall water splitting under visible light irradiation. *Journal of Alloys and Compounds*, **2014**, 615, 79-83	5.7	26
56	High thermoelectric performance of Ge1PbxSe0.5Te0.5 due to (Pb, Se) co-doping. *Acta Materialia* , **2014**, 74, 215-223	8.4	26
55	The Atomic Circus: Small Electron Beams Spotlight Advanced Materials Down to the Atomic Scale. *Advanced Materials*, **2018**, 30, e1802402	24	26
54	Progress and prospects of aberration-corrected STEM for functional materials. *Ultramicroscopy*, **2018**, 194, 182-192	3.1	25

53	Synergistically optimizing interdependent thermoelectric parameters of n-type PbSe through introducing a small amount of Zn. *Materials Today Physics*, **2019**, 9, 100102	8	25
52	Nitrogen-Doped Cobalt Phosphide for Enhanced Hydrogen Evolution Activity. *ACS Applied Materials & Interfaces*, **2019**, 11, 17359-17367	9.5	22
51	Extremely low thermal conductivity from bismuth selenohalides with 1D soft crystal structure. *Science China Materials*, **2020**, 63, 1759-1768	7.1	22
50	Anomalous Hall magnetoresistance in a ferromagnet. *Nature Communications*, **2018**, 9, 2255	17.4	22
49	Orthorhombic Ti2O3: A Polymorph-Dependent Narrow-Bandgap Ferromagnetic Oxide. *Advanced Functional Materials*, **2018**, 28, 1705657	15.6	21
48	Comprehensive Investigation on the Thermoelectric Properties of p-Type PbTe-PbSe-PbS Alloys. *Advanced Electronic Materials*, **2019**, 5, 1900609	6.4	20
47	Electronic-reconstruction-enhanced hydrogen evolution catalysis in oxide polymorphs. *Nature Communications*, **2019**, 10, 3149	17.4	20
46	A Coherently Strained Monoclinic [111]PbTiO3 Film Exhibiting Zero Poisson's Ratio State. *Advanced Functional Materials*, **2019**, 29, 1901687	15.6	19
45	Enhancing Thermoelectric Performance of p-Type PbSe through Suppressing Electronic Thermal Transports. *ACS Applied Energy Materials*, **2019**, 2, 8236-8243	6.1	18
44	Spontaneous strain glass to martensite transition in ferromagnetic Ni-Co-Mn-Ga strain glass. *Applied Physics Letters*, **2013**, 102, 141909	3.4	18
43	Periodic Wrinkle-Patterned Single-Crystalline Ferroelectric Oxide Membranes with Enhanced Piezoelectricity. *Advanced Materials*, **2020**, 32, e2004477	24	18
42	Investigations on electrical and thermal transport properties of Cu2SnSe3 with unusual coexisting nanophases. *Materials Today Physics*, **2018**, 7, 77-88	8	17
41	Seeing atomic-scale structural origins and foreseeing new pathways to improved thermoelectric materials. *Materials Horizons*, **2019**, 6, 1548-1570	14.4	16
40	Synergistic boost of output power density and efficiency in In-Li-codoped SnTe. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 21998-22003	11.5	15
39	Medium Entropy-Enabled High Performance Cubic GeTe Thermoelectrics. *Advanced Science*, **2021**, 8, 2100220	13.6	14
38	Artificial two-dimensional polar metal by charge transfer to a ferroelectric insulator. *Communications Physics*, **2019**, 2,	5.4	13
37	Enhanced mechanical and thermoelectric properties enabled by hierarchical structure in medium-temperature Sb2Te3 based alloys. *Nano Energy*, **2020**, 78, 105228	17.1	13
36	Contrasting roles of small metallic elements M (M = Cu, Zn, Ni) in enhancing the thermoelectric performance of n-type PbM0.01Se. *Journal of Materials Chemistry A*, **2020**, 8, 5699-5708	13	12

35	Material descriptors for morphotropic phase boundary curvature in lead-free piezoelectrics. *Applied Physics Letters*, **2017**, 111, 032907	3.4	12
34	Outstanding Piezoelectric Performance in Lead-Free 0.95(K,Na)(Sb,Nb)O3-0.05(Bi,Na,K)ZrO3 Thick Films with Oriented Nanophase Coexistence. *Advanced Electronic Materials*, **2019**, 5, 1800691	6.4	11
33	NiFe Layered Double-Hydroxide Nanosheets on a Cactuslike (Ni,Co)Se2 Support for Water Oxidation. *ACS Applied Nano Materials*, **2019**, 2, 325-333	5.6	11
32	Rotatable precipitates change the scale-free to scale dependent statistics in compressed Ti nano-pillars. *Scientific Reports*, **2019**, 9, 3778	4.9	10
31	Time-dependent ferroelectric transition in Pb(1−)(Zr0.4Ti0.6)(1−/4)O3 −xLa system. *Applied Physics Letters*, **2013**, 102, 222907	3.4	10
30	Nanoscale bubble domains with polar topologies in bulk ferroelectrics. *Nature Communications*, **2021**, 12, 3632	17.4	10
29	Percolated Strain Networks and Universal Scaling Properties of Strain Glasses. *Physical Review Letters*, **2019**, 123, 015701	7.4	9
28	Investigation on thermal transport and structural properties of InFeO 3 (ZnO) m with modulated layer structures. *Acta Materialia*, **2017**, 136, 235-241	8.4	9
27	Evolution from Lead-Based to Lead-Free Piezoelectrics: Engineering of Lattices, Domains, Boundaries, and Defects Leading to Giant Response. *Advanced Materials*, **2021**, e2106845	24	9
26	New insights into the role of dislocation engineering in N-type filled skutterudite CoSb3. *Journal of Materials Chemistry C*, **2019**, 7, 13622-13631	7.1	9
25	(GeTe)(AgSnSe): Strong Atomic Disorder-Induced High Thermoelectric Performance near the Ioffe-Regel Limit. *ACS Applied Materials & Interfaces*, **2021**, 13, 47081-47089	9.5	7
24	Critical role of tellurium self-compensation in enhancing the thermoelectric performance of p-Type Bi0.4Sb1.6Te3 alloy. *Chemical Engineering Journal*, **2021**, 425, 130670	14.7	7
23	Nanoscale Phase Mixture and Multifield-Induced Topotactic Phase Transformation in SrFeO. *ACS Applied Materials & Interfaces*, **2020**, 12, 21883-21893	9.5	6
22	Multiscale Defects as Strong Phonon Scatters to Enhance Thermoelectric Performance in Mg2Sn1−Sbx Solid Solutions. *Small Methods*, **2019**, 3, 1900412	12.8	6
21	Effect of martensitic structure on the magnetic field controlled damping effect in a NiFeMnGa ferromagnetic shape memory alloy. *Journal of Materials Science*, **2017**, 52, 12854-12860	4.3	6
20	Symmetry of the Underlying Lattice in (K,Na)NbO-Based Relaxor Ferroelectrics with Large Electromechanical Response. *ACS Applied Materials & Interfaces*, **2021**, 13, 7461-7469	9.5	6
19	Rationally optimized carrier effective mass and carrier density leads to high average ZT value in n-type PbSe. *Journal of Materials Chemistry A*,	13	5
18	High-Ranged ZT Value Promotes Thermoelectric Cooling and Power Generation in n-Type PbTe. *Advanced Energy Materials*,2200204	21.8	5

17	Understanding Phonon Scattering by Nanoprecipitates in Potassium-Doped Lead Chalcogenides. *ACS Applied Materials & Interfaces*, **2017**, 9, 3686-3693	9.5	4
16	Premartensite serving as an intermediary state between strain glass and martensite in ferromagnetic Ni-Fe-Mn-Ga. *Materials and Design*, **2018**, 152, 102-109	8.1	4
15	Fe substitution induced intermartensitic transition and its internal stress dependent transforming behavior in Ni□Mn□Ga based alloy. *Journal of Alloys and Compounds*, **2013**, 581, 812-815	5.7	4
14	Alkali-deficiency driven charged out-of-phase boundaries for giant electromechanical response. *Nature Communications*, **2021**, 12, 2841	17.4	4
13	New Role of Relaxor Multiphase Coexistence in Potassium Sodium Niobate Ceramics: Reduced Electric Field Dependence of Strain Temperature Stability. *ACS Applied Materials & Interfaces*, **2020**, 12, 49822-49829	9.5	3
12	Bismuth ion battery □A new member in trivalent battery technology. *Energy Storage Materials*, **2020**, 25, 100-104	19.4	2
11	Piezoelectric Films: Outstanding Piezoelectric Performance in Lead-Free 0.95(K,Na)(Sb,Nb)O3-0.05(Bi,Na,K)ZrO3 Thick Films with Oriented Nanophase Coexistence (Adv. Electron. Mater. 4/2019). *Advanced Electronic Materials*, **2019**, 5, 1970020	6.4	1
10	Understanding the Role of Potassium Doping in PbTe-PbS Thermoelectrics. *Microscopy and Microanalysis*, **2014**, 20, 506-507	0.5	1
9	Decoding the Structural Origin of Piezoelectric and Thermoelectric Materials with Aberration-Corrected STEM. *Microscopy and Microanalysis*, **2018**, 24, 72-73	0.5	1
8	Constructing multi-type defects in In0.1Sb1.9Te3-(MgB2) composites: Simultaneously enhancing the thermoelectric and mechanical properties. *Nano Energy*, **2021**, 90, 106530	17.1	1
7	Synergistic Strategies to Boost Lead Telluride as Prospective Thermoelectrics **2021**, 155-189		1
6	Nanotwins Strengthening High Thermoelectric Performance Bismuth Antimony Telluride Alloys.. *Advanced Science*, **2022**, e2200432	13.6	1
5	Designing Energy Materials via Atomic-resolution Microscopy and Spectroscopy. *Microscopy and Microanalysis*, **2019**, 25, 1998-1999	0.5	0
4	Tracking Atoms, Vacancies and Electrons via Aberration-corrected Microscopy and First-Principles Theory **2016**, 964-965		
3	Electron Microscopy for Characterization of Thermoelectric Nanomaterials **2014**, 427-536		
2	On the Origin of Low Thermal Conductivity in High Thermoelectric Performance in n-type BiAgSeS. *Microscopy and Microanalysis*, **2013**, 19, 2000-2001	0.5	
1	Flexible Ferroelectrics: Periodic Wrinkle-Patterned Single-Crystalline Ferroelectric Oxide Membranes with Enhanced Piezoelectricity (Adv. Mater. 50/2020). *Advanced Materials*, **2020**, 32, 2070377	24	