

Zhao Wang

List of Publications by Year in descending order

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124
papers

4,608
citations

109264

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125
all docs

125
docs citations

125
times ranked

6595
citing authors

#	ARTICLE	IF	CITATIONS
1	Flexible Piezoelectric-Induced Pressure Sensors for Static Measurements Based on Nanowires/Graphene Heterostructures. ACS Nano, 2017, 11, 4507-4513.	7.3	435
2	Hydrogen Gas Sensors Based on Semiconductor Oxide Nanostructures. Sensors, 2012, 12, 5517-5550.	2.1	358
3	Hollow Urchin-like ZnO thin Films by Electrochemical Deposition. Advanced Materials, 2010, 22, 1607-1612.	11.1	175
4	Strong enhancement of phonon scattering through nanoscale grains in lead sulfide thermoelectrics. NPG Asia Materials, 2014, 6, e108-e108.	3.8	140
5	Inflating hollow nanocrystals through a repeated Kirkendall cavitation process. Nature Communications, 2017, 8, 1261.	5.8	135
6	Diameter dependence of SiGe nanowire thermal conductivity. Applied Physics Letters, 2010, 97, .	1.5	127
7	Highly Responsive Room-Temperature Hydrogen Sensing of In_2MoO_7 Nanoribbon Membranes. ACS Applied Materials & Interfaces, 2015, 7, 9247-9253.	4.0	125
8	Fast and highly-sensitive hydrogen sensing of Nb ₂ O ₅ nanowires at room temperature. International Journal of Hydrogen Energy, 2012, 37, 4526-4532.	3.8	118
9	Synthesis, growth mechanism and optical properties of (K,Na)NbO ₃ nanostructures. CrystEngComm, 2010, 12, 3157.	1.3	117
10	Unexpected High-Temperature Stability of $\text{In}_2\text{Zn}_4\text{Sb}_3$ Opens the Door to Enhanced Thermoelectric Performance. Journal of the American Chemical Society, 2014, 136, 1497-1504.	6.6	115
11	A DFT study of CO adsorption on the pristine, defective, In-doped and Sb-doped graphene and the effect of applied electric field. Applied Surface Science, 2019, 480, 205-211.	3.1	113
12	Assessing the Thermoelectric Properties of Sintered Compounds via High-Throughput <i>Ab-Initio</i> Calculations. Physical Review X, 2011, 1, .	2.8	92
13	Ultra-fast and highly selective room-temperature formaldehyde gas sensing of Pt-decorated MoO ₃ nanobelts. Journal of Alloys and Compounds, 2019, 797, 666-675.	2.8	88
14	Metal Oxide Based Heterojunctions for Gas Sensors: A Review. Nanomaterials, 2021, 11, 1026.	1.9	77
15	Activatable Two-Photon Near-Infrared Fluorescent Probe Tailored toward Peroxynitrite <i>In Vivo</i> Imaging in Tumors. Analytical Chemistry, 2020, 92, 13305-13312.	3.2	71
16	Black Phosphorus@Ti ₃ C ₂ T _x MXene Composites with Engineered Chemical Bonds for Commercial-Level Capacitive Energy Storage. ACS Nano, 2021, 15, 12975-12987.	7.3	70
17	Periodic ripples in suspended graphene. Physical Review B, 2011, 83, .	1.1	67
18	Bias-switchable negative and positive photoconductivity in 2D FePS ₃ ultraviolet photodetectors. Nanotechnology, 2018, 29, 244001.	1.3	67

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19	Piezoelectric Nanowires in Energy Harvesting Applications. <i>Advances in Materials Science and Engineering</i> , 2015, 2015, 1-21.	1.0	66
20	Highly Sensitive Near-Infrared Imaging of Peroxynitrite Fluxes in Inflammation Progress. <i>Analytical Chemistry</i> , 2021, 93, 3035-3041.	3.2	66
21	Rapid response hydrogen sensor based on nanoporous Pd thin films. <i>International Journal of Hydrogen Energy</i> , 2016, 41, 10986-10990.	3.8	58
22	Thermoelectric transport properties of silicon: Toward an <i>ab initio</i> approach. <i>Physical Review B</i> , 2011, 83, .	1.1	57
23	A DFT study of the enhanced hydrogen storage performance of the Li-decorated graphene nanoribbons. <i>Vacuum</i> , 2020, 171, 109011.	1.6	57
24	Defect-original room-temperature hydrogen sensing of MoO ₃ nanoribbon: Experimental and theoretical studies. <i>Sensors and Actuators B: Chemical</i> , 2018, 260, 21-32.	4.0	56
25	Alignment of graphene nanoribbons by an electric field. <i>Carbon</i> , 2009, 47, 3050-3053.	5.4	51
26	Hydrothermal growth and optical properties of Nb ₂ O ₅ nanorod arrays. <i>Journal of Materials Chemistry C</i> , 2014, 2, 8185-8190.	2.7	49
27	Rapid hydrogen sensing response and aging of $\text{I}\pm\text{-MoO}_3$ nanowires paper sensor. <i>International Journal of Hydrogen Energy</i> , 2017, 42, 8399-8405.	3.8	47
28	Electrostatics of graphene: Charge distribution and capacitance. <i>Chemical Physics Letters</i> , 2010, 489, 229-236.	1.2	46
29	Self-Powered Viscosity and Pressure Sensing in Microfluidic Systems Based on the Piezoelectric Energy Harvesting of Flowing Droplets. <i>ACS Applied Materials & Interfaces</i> , 2017, 9, 28586-28595.	4.0	46
30	High-performance piezoelectric energy harvesting of vertically aligned Pb(Zr,Ti)O ₃ nanorod arrays. <i>RSC Advances</i> , 2018, 8, 7422-7427.	1.7	45
31	Influence of lower current densities on the residual stress and structure of thick nickel electrodeposits. <i>Surface and Coatings Technology</i> , 2011, 205, 3651-3657.	2.2	43
32	Enhancement of the room-temperature hydrogen sensing performance of MoO ₃ nanoribbons annealed in a reducing gas. <i>International Journal of Hydrogen Energy</i> , 2019, 44, 7725-7733.	3.8	43
33	Absence of Casimir regime in two-dimensional nanoribbon phonon conduction. <i>Applied Physics Letters</i> , 2011, 99, .	1.5	41
34	Remarkably accelerated room-temperature hydrogen sensing of MoO ₃ nanoribbon/graphene composites by suppressing the nanojunction effects. <i>Sensors and Actuators B: Chemical</i> , 2017, 248, 160-168.	4.0	41
35	Enhanced hydrogen storage performance of graphene nanoflakes doped with Cr atoms: a DFT study. <i>RSC Advances</i> , 2019, 9, 25690-25696.	1.7	40
36	Fast and highly sensitive humidity sensors based on NaNbO ₃ nanofibers. <i>RSC Advances</i> , 2015, 5, 20453-20458.	1.7	37

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37	Diffusive versus Displacive Contact Plasticity of Nanoscale Asperities: Temperature- and Velocity-Dependent Strongest Size. <i>Nano Letters</i> , 2015, 15, 6582-6585.	4.5	35
38	Hydrogen sensors based on Pt-decorated SnO ₂ nanorods with fast and sensitive room-temperature sensing performance. <i>Journal of Alloys and Compounds</i> , 2019, 811, 152086.	2.8	35
39	A self-powered vibration sensor based on electrospun poly(vinylidene fluoride) nanofibres with enhanced piezoelectric response. <i>Smart Materials and Structures</i> , 2016, 25, 105010.	1.8	33
40	Improper molecular ferroelectrics with simultaneous ultrahigh pyroelectricity and figures of merit. <i>Science Advances</i> , 2021, 7, .	4.7	32
41	Electrostatic deflections of cantilevered metallic carbon nanotubes via charge-dipole model. <i>Physical Review B</i> , 2007, 76, .	1.1	31
42	Voltage-induced penetration effect in liquid metals at room temperature. <i>National Science Review</i> , 2020, 7, 366-372.	4.6	31
43	(K,Na)NbO ₃ Nanofiber-based Self-Powered Sensors for Accurate Detection of Dynamic Strain. <i>ACS Applied Materials & Interfaces</i> , 2015, 7, 4921-4927.	4.0	29
44	Electrostatic deflections of cantilevered semiconducting single-walled carbon nanotubes. <i>Physical Review B</i> , 2007, 75, .	1.1	28
45	A novel sensor made of Antimony Doped Tin Oxide-silica composite sol on a glassy carbon electrode modified by single-walled carbon nanotubes for detection of norepinephrine. <i>Materials Science and Engineering C</i> , 2017, 80, 180-186.	3.8	28
46	Electric charge enhancements in carbon nanotubes: Theory and experiments. <i>Physical Review B</i> , 2008, 78, .	1.1	27
47	Deformation of Doubly Clamped Single-Walled Carbon Nanotubes in an Electrostatic Field. <i>Physical Review Letters</i> , 2009, 102, 215501.	2.9	27
48	The adsorption of NO onto an Al-doped ZnO monolayer and the effects of applied electric fields: A DFT study. <i>Computational and Theoretical Chemistry</i> , 2020, 1180, 112829.	1.1	26
49	Orientation-Control Synthesis of KTa _{0.25} Nb _{0.75} O ₃ Nanorods. <i>Journal of the American Ceramic Society</i> , 2010, 93, 609-613.	1.9	25
50	Investigation of the oxidation states of Cu additive in colored borosilicate glasses by electron energy loss spectroscopy. <i>Journal of Applied Physics</i> , 2014, 116, .	1.1	25
51	Fe-doped MoO ₃ nanoribbons for high-performance hydrogen sensor at room temperature. <i>Journal of Alloys and Compounds</i> , 2021, 877, 160200.	2.8	24
52	Homogeneous ZnO nanowire arrays p-n junction for blue light-emitting diode applications. <i>Optics Express</i> , 2019, 27, A1207.	1.7	24
53	Adsorption of Organic Molecules on Onion-like Carbons: Insights on the Formation of Interstellar Hydrocarbons. <i>Astrophysical Journal</i> , 2018, 867, 133.	1.6	21
54	Room-temperature hydrogen sensing performance of Nb ₂ O ₅ nanorod arrays. <i>RSC Advances</i> , 2018, 8, 16897-16901.	1.7	21

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55	Room-temperature H ₂ gasochromic behavior of Pd-modified MoO ₃ nanowire labels. <i>Materials Chemistry and Physics</i> , 2019, 227, 111-116.	2.0	21
56	Wearable Piezoelectric Nanogenerators Based on Core-Shell Ga-PZT@GaO Nanorod-Enabled P(VDF-TrFE) Composites. <i>ACS Applied Materials & Interfaces</i> , 2022, 14, 7990-8000.	4.0	21
57	A DFT study on the hydrogen storage performance of MoS ₂ monolayers doped with group 8B transition metals. <i>International Journal of Hydrogen Energy</i> , 2021, 46, 24233-24246.	3.8	20
58	Synthesis, characterization and ferroelectric properties of lead-free K _{0.5} Na _{0.5} NbO ₃ nanotube arrays. <i>Journal of Applied Physics</i> , 2011, 109, .	1.1	19
59	Remarkably Enhanced Room-Temperature Hydrogen Sensing of SnO ₂ Nanoflowers via Vacuum Annealing Treatment. <i>Sensors</i> , 2018, 18, 949.	2.1	19
60	Engineering the field emission properties of graphene film by gas adsorbates. <i>Physical Chemistry Chemical Physics</i> , 2014, 16, 1850-1855.	1.3	18
61	Investigations of drug-induced liver injury by a peroxyxynitrite activatable two-photon fluorescence probe. <i>Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy</i> , 2021, 246, 118960.	2.0	18
62	Deflection of suspended graphene by a transverse electric field. <i>Physical Review B</i> , 2010, 81, .	1.1	17
63	Compression of Nanowires Using a Flat Indenter: Diametrical Elasticity Measurement. <i>Nano Letters</i> , 2012, 12, 2289-2293.	4.5	17
64	Orientation-dependent piezoresponse and high-performance energy harvesting of lead-free (K,Na)NbO ₃ nanorod arrays. <i>RSC Advances</i> , 2017, 7, 16908-16915.	1.7	17
65	Superlubricity of molybdenum disulfide subjected to large compressive strains. <i>Friction</i> , 2022, 10, 209-216.	3.4	17
66	Raman scattering, electronic, and ferroelectric properties of Nd modified Bi ₄ Ti ₃ O ₁₂ nanotube arrays. <i>Journal of Applied Physics</i> , 2010, 107, 094105.	1.1	16
67	Formation of Interstellar Complex Polycyclic Aromatic Hydrocarbons: Insights from Molecular Dynamics Simulations of Dehydrogenated Benzene. <i>Astrophysical Journal</i> , 2020, 900, 188.	1.6	16
68	Machine-learning Prediction of Infrared Spectra of Interstellar Polycyclic Aromatic Hydrocarbons. <i>Astrophysical Journal</i> , 2020, 902, 100.	1.6	16
69	A new multiscale formulation for the electromechanical behavior of nanomaterials. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2011, 200, 2447-2457.	3.4	15
70	Atomistic origin of glass-like Zn ₄ Sb ₃ thermal conductivity. <i>Applied Physics Letters</i> , 2013, 103, 103902.	1.5	15
71	Microstructure-dependent mechanical properties of semi-solid copper alloys. <i>Journal of Alloys and Compounds</i> , 2017, 715, 413-420.	2.8	15
72	A DFT study on enhanced adsorption of H ₂ on Be-decorated porous graphene nanosheet and the effects of applied electrical fields. <i>International Journal of Hydrogen Energy</i> , 2021, 46, 5891-5903.	3.8	15

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73	A DFT study on the hydrogen storage performance of the Sb monolayer decorated with Li, Na or K. <i>Vacuum</i> , 2021, 183, 109868.	1.6	15
74	Ultrahigh piezoelectric coefficients of Li-doped (K,Na)NbO ₃ nanorod arrays with manipulated O-T phase boundary: Towards energy harvesting and self-powered human movement monitoring. <i>Nano Energy</i> , 2021, 86, 106072.	8.2	15
75	Effects of substrate and electric fields on charges in carbon nanotubes. <i>Physical Review B</i> , 2009, 79, .	1.1	14
76	Electromechanical Conversion Behavior of K _{0.5} Na _{0.5} NbO ₃ Nanorods Synthesized by Hydrothermal Method. <i>Integrated Ferroelectrics</i> , 2013, 142, 24-30.	0.3	14
77	Phase boundary and annealing dependent piezoelectricity in lead-free (K,Na)NbO ₃ nanorod arrays. <i>Applied Physics Letters</i> , 2017, 110, .	1.5	14
78	Atomistic building blocks of one-dimensional Guinier–Preston–Bagaryatsky zones in Al-Cu-Mg alloys. <i>Materials and Design</i> , 2020, 187, 108393.	3.3	14
79	Revealing the atomistic mechanisms of strain glass transition in ferroelastics. <i>Acta Materialia</i> , 2020, 194, 134-143.	3.8	14
80	Alkylaminomaleimide fluorophores: synthesis via air oxidation and emission modulation by twisted intramolecular charge transfer. <i>Organic Chemistry Frontiers</i> , 2021, 8, 239-248.	2.3	14
81	Chirality-dependent motion transmission between aligned carbon nanotubes. <i>Carbon</i> , 2019, 151, 130-135.	5.4	13
82	An Ultrasensitive and Ultraspecific Hydrogen Sensor Based on Defect-Dominated Electron Scattering in Pt Nanowire Arrays. <i>Advanced Materials Interfaces</i> , 2019, 6, 1801304.	1.9	13
83	Geometry-Dependent Nonlinear Decrease of the Effective Young's Modulus of Single-walled Carbon Nanotubes Submitted to Large Tensile Loadings. <i>Fullerenes Nanotubes and Carbon Nanostructures</i> , 2009, 17, 1-10.	1.0	12
84	Twisting carbon nanotubes: A molecular dynamics study. <i>Surface Science</i> , 2010, 604, 496-499.	0.8	12
85	Role of force-constant difference in phonon scattering by nano-precipitates in PbTe. <i>Journal of Applied Physics</i> , 2015, 118, .	1.1	12
86	Hydrogen sensing kinetics of laterally aligned MoO ₃ nanoribbon arrays with accelerated response and recovery performances at room temperature. <i>International Journal of Hydrogen Energy</i> , 2020, 45, 23841-23850.	3.8	12
87	The enhanced hydrogen-sensing performance of the Fe-doped MoO ₃ monolayer: A DFT study. <i>International Journal of Hydrogen Energy</i> , 2020, 45, 10257-10267.	3.8	12
88	Selective Conduction of Organic Molecules via Free-Standing Graphene. <i>Journal of Physical Chemistry C</i> , 2019, 123, 15166-15170.	1.5	11
89	A DFT study of the selective adsorption of XO ₂ (X = C, S or N) on Ta-doped graphene. <i>Computational and Theoretical Chemistry</i> , 2020, 1190, 113003.	1.1	11
90	Atomic Resolution Interfacial Structure of Lead-free Ferroelectric K _{0.5} Na _{0.5} NbO ₃ Thin films Deposited on SrTiO ₃ . <i>Scientific Reports</i> , 2016, 6, 37788.	1.6	10

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91	The improved CO adsorption/sensing performance of Stone-Wales defected graphene doped with Fe: A DFT study. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2021, 128, 114603.	1.3	10
92	In situ synthesis of MoS ₂ -decorated Zn-doped MoO ₃ for outstanding hydrogen sensing at room temperature. <i>Sensors and Actuators B: Chemical</i> , 2022, 367, 132026.	4.0	10
93	Fast, Sensitive, and Highly Selective Room-Temperature Hydrogen Sensing of Defect-Rich Orthorhombic Nb ₂ O ₅ Nanobelts with an Abnormal <i>p</i> -Type Sensor Response. <i>ACS Applied Materials & Interfaces</i> , 2022, 14, 25937-25948.	4.0	10
94	Lubricity of graphene on rough Au surfaces. <i>Journal Physics D: Applied Physics</i> , 2018, 51, 435301.	1.3	9
95	Chirality-Selective Transport of Benzene Molecules on Carbon Nanotubes. <i>Journal of Physical Chemistry C</i> , 2020, 124, 3851-3856.	1.5	9
96	Atomistic mechanisms governing structural stability change of zinc antimony thermoelectrics. <i>Applied Physics Letters</i> , 2015, 106, 013904.	1.5	8
97	Mechanisms governing phonon scattering by topological defects in graphene nanoribbons. <i>Nanotechnology</i> , 2016, 27, 055401.	1.3	8
98	Size effect on the spontaneous coalescence of nanowires. <i>Nanotechnology</i> , 2019, 30, 245601.	1.3	8
99	A DFT study on the outstanding hydrogen storage performance of the Ti-decorated MoS ₂ monolayer. <i>Surfaces and Interfaces</i> , 2021, 26, 101329.	1.5	8
100	Evolution of the composition, structure, and piezoelectric performance of (K _{1-x} Na _x)NbO ₃ nanorod arrays with hydrothermal reaction time. <i>Applied Physics Letters</i> , 2018, 112, .	1.5	7
101	Novel Periodic Bilayer Au Nanostructures for Ultrasensitive Surface-Enhanced Raman Spectroscopy. <i>Advanced Materials Interfaces</i> , 2018, 5, 1800820.	1.9	7
102	Hydrogen adsorption on TaSe ₂ monolayer doped with light metals: A DFT study. <i>Vacuum</i> , 2022, 196, 110775.	1.6	7
103	Optimizing phonon scattering by nanoprecipitates in lead chalcogenides. <i>Applied Physics Letters</i> , 2016, 108, 113901.	1.5	6
104	Understanding Phonon Scattering by Nanoprecipitates in Potassium-Doped Lead Chalcogenides. <i>ACS Applied Materials & Interfaces</i> , 2017, 9, 3686-3693.	4.0	6
105	Modelling of the electronic and ferroelectric properties of trichloroacetamide using Monte Carlo and first-principles calculations. <i>Journal of Materiomics</i> , 2017, 3, 130-134.	2.8	6
106	Strain-tunable lattice thermal conductivity of the Janus PtSTe monolayer. <i>Journal of Physics Condensed Matter</i> , 2022, 34, 015303.	0.7	6
107	An atomistic model for the charge distribution in layered MoS ₂ . <i>Journal of Chemical Physics</i> , 2018, 149, 124102.	1.2	5
108	Repairable Characteristic of Zn ₄ Sb ₃ and Its Influence on Thermoelectric Performance. <i>ACS Applied Energy Materials</i> , 2021, 4, 5332-5338.	2.5	5

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109	Machine-learning Interpretation of the Correlation between Infrared Emission Features of Interstellar Polycyclic Aromatic Hydrocarbons. <i>Astrophysical Journal</i> , 2021, 922, 101.	1.6	5
110	Mass density of individual cobalt nanowires. <i>Applied Physics Letters</i> , 2010, 96, 051903.	1.5	4
111	Ferromagnetic and Photocatalytic Properties of Layered Perovskite LaBaCo ₂ O ₆ Nanostructures. <i>Journal of Nanoscience and Nanotechnology</i> , 2016, 16, 930-933.	0.9	4
112	Controllable Elasticity Storage and Release in CuO~Pt Core~Shell Nanowires. <i>ChemNanoMat</i> , 2018, 4, 1140-1144.	1.5	4
113	Influence of Structural Parameters on the Surface Enhanced Raman Scattering of Au Nanoarrays. <i>Journal of Nanoscience and Nanotechnology</i> , 2019, 19, 5317-5322.	0.9	4
114	Twisted bilayer graphene as a linear nanoactuator. <i>Physical Review B</i> , 2020, 102, .	1.1	4
115	Fabrication of Cu~Pt core~shell nanohooks by <i>in situ</i> reconstructing the Pt-shells. <i>Nanotechnology</i> , 2018, 29, 215301.	1.3	3
116	Gear junctions between chiral boron nitride nanotubes. <i>Physical Review B</i> , 2019, 100, .	1.1	3
117	Dramatic effect of a transverse electric field on frictional properties of graphene. <i>Journal Physics D: Applied Physics</i> , 2019, 52, 385301.	1.3	3
118	Atomic scale study of the oxygen annealing effect on piezoelectricity enhancement of (K,Na)NbO ₃ nanorods. <i>Journal of Materials Chemistry C</i> , 2020, 8, 15830-15838.	2.7	3
119	An atomistic model for predicting charge distribution in hexagonal boron nitride. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2021, 127, 114567.	1.3	3
120	The Anisotropic Growth of Perovskite Oxide Nanowires. , 0, , .		2
121	Real-Time Characterization of Fibrinogen Interaction with Modified Titanium Dioxide Film by Quartz Crystal Microbalance with Dissipation. <i>Chinese Journal of Chemical Physics</i> , 2014, 27, 355-360.	0.6	2
122	Influence of Onion-like Carbonaceous Particles on the Aggregation Process of Hydrocarbons. <i>ACS Omega</i> , 2021, 6, 27898-27904.	1.6	2
123	Fabrication and Characterization of K _{0.5} Na _{0.5} NbO ₃ Nanotube Arrays by Sol-Gel AAO Template Method. <i>Wuji Cailiao Xuebao/Journal of Inorganic Materials</i> , 2010, 25, 687-690.	0.6	1
124	High-Performance Gas Sensors Based on Nanostructured Metal Oxide Heterojunctions. <i>Materials Horizons</i> , 2020, , 19-70.	0.3	1