Zhuhua Zhang

List of Publications by Year
in descending order

137
papers

9,722
citations

38660
50
h-index

38300
95
g-index

147
all docs

147
docs citations

147
times ranked

11066
citing authors

#	Article	IF	Citations
1	â€œWhite Graphenesâ€: Boron Nitride Nanoribbons via Boron Nitride Nanotube Unwrapping. Nano Letters, 2010, 10, 5049-5055.	4.5	723
2	Generating electricity by moving a droplet of ionic liquid along graphene. Nature Nanotechnology, 2014, 9, 378-383.	15.6	488
3	Emerging hydrovoltaic technology. Nature Nanotechnology, 2018, 13, 1109-1119.	15.6	429
4	Borophene as a prototype for synthetic 2D materials development. Nature Nanotechnology, 2018, 13, 444-450.	15.6	392
5	Two-dimensional boron: structures, properties and applications. Chemical Society Reviews, 2017, 46, 6746-6763.	18.7	296
6	Twoâ€Dimensional Boron Monolayers Mediated by Metal Substrates. Angewandte Chemie - International Edition, 2015, 54, 13022-13026.	7.2	288
7	Energy-gap modulation of BN ribbons by transverse electric fields: First-principles calculations. Physical Review B, 2008, 77, .	1.1	272
8	Borophene Synthesis on Au(111). ACS Nano, 2019, 13, 3816-3822.	7.3	261
9	Waving potential in graphene. Nature Communications, 2014, 5, 3582.	5.8	246
10	Elasticity, Flexibility, and Ideal Strength of Borophenes. Advanced Functional Materials, 2017, 27, 1605059.	7.8	237
11	Intrinsic Magnetism of Grain Boundaries in Two-Dimensional Metal Dichalcogenides. ACS Nano, 2013, 7, 10475-10481.	7.3	232
12	Topâ€“down fabrication of sub-nanometre semiconducting nanoribbons derived from molybdenum disulfide sheets. Nature Communications, 2013, 4, 1776.	5.8	220
13	Direct chemical conversion of graphene to boron- and nitrogen- and carbon-containing atomic layers. Nature Communications, 2014, 5, 3193.	5.8	198
14	Dislocation motion and grain boundary migration in two-dimensional tungsten disulphide. Nature Communications, 2014, 5, 4867.	5.8	192
15	Boron Nitride Nanostructures: Fabrication, Functionalization and Applications. Small, 2016, 12, 2942-2968.	5.2	187
16	Two-Dimensional Tetragonal TiC Monolayer Sheet and Nanoribbons. Journal of the American Chemical Society, 2012, 134, 19326-19329.	6.6	186
17	Photoluminescence Quenching and Charge Transfer in Artificial Heterostacks of Monolayer Transition Metal Dichalcogenides and Few-Layer Black Phosphorus. ACS Nano, 2015, 9, 555-563.	7.3	183
18	Predicting Two-Dimensional Silicon Carbide Monolayers. ACS Nano, 2015, 9, 9802-9809.	7.3	177

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19	Self-gating in semiconductor electrocatalysis. Nature Materials, 2019, 18, 1098-1104.	13.3	167
20	Substrate-Induced Nanoscale Undulations of Borophene on Silver. Nano Letters, 2016, 16, 6622-6627.	4.5	155
21	Polyphony in B flat. Nature Chemistry, 2016, 8, 525-527.	6.6	148
22	Harvesting Energy from Water Flow over Graphene?. Nano Letters, 2012, 12, 1736-1741.	4.5	132
23	Intermixing and periodic self-assembly of borophene line defects. Nature Materials, 2018, 17, 783-788.	13.3	129
24	Interlocked Catenane-Like Structure Predicted in Au₂₄(SR)₂₀: Implication to Structural Evolution of Thiolated Gold Clusters from Homoleptic Gold(I) Thiolates to Core-Stacked Nanoparticles. Journal of the American Chemical Society, 2012, 134, 3015-3024.	6.6	123
25	Growth Mechanism and Morphology of Hexagonal Boron Nitride. Nano Letters, 2016, 16, 1398-1403.	4.5	123
26	Strain-Induced Electronic Structure Changes in Stacked van der Waals Heterostructures. Nano Letters, 2016, 16, 3314-3320.	4.5	122
27	Amorphizing noble metal chalcogenide catalysts at the single-layer limit towards hydrogen production. Nature Catalysis, 2022, 5, 212-221.	16.1	113
28	Hydrovoltaic technology: from mechanism to applications. Chemical Society Reviews, 2022, 51, 4902-4927.	18.7	110
29	Controlled Synthesis of Organic/Inorganic van der Waals Solid for Tunable Lightâ€“Matter Interactions. Advanced Materials, 2015, 27, 7800-7808.	11.1	109
30	Strong interfacial coupling of MoS2/g-C3N4 van de Waals solids for highly active water reduction. Nano Energy, 2016, 27, 44-50.	8.2	96
31	Hydrothermal Synthesis and Thermoelectric Transport Properties of Uniform Single-Crystalline Pearl-Necklace-Shaped PbTe Nanowires. Crystal Growth and Design, 2008, 8, 2906-2911.	1.4	91
32	Intermediate Phase Enhances Inorganic Perovskite and Metal Oxide Interface for Efficient Photovoltaics. Joule, 2020, 4, 222-234.	11.7	88
33	Tunable Ferromagnetic Spin Ordering in Boron Nitride Nanotubes with Topological Fluorine Adsorption. Journal of the American Chemical Society, 2009, 131, 6874-6879.	6.6	85
34	Self-sustained electricity generator driven by the compatible integration of ambient moisture adsorption and evaporation. Nature Communications, 2022, 13, .	5.8	81
35	Fluorinating Hexagonal Boron Nitride into Diamond-Like Nanofilms with Tunable Band Gap and Ferromagnetism. Journal of the American Chemical Society, 2011, 133, 14831-14838.	6.6	79
36	Graphynes for Water Desalination and Gas Separation. Advanced Materials, 2019, 31, e1803772.	11.1	75

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37	Magnetoelectric Effect in Graphene Nanoribbons on Substrates via Electric Bias Control of Exchange Splitting. Physical Review Letters, 2009, 103, 187204.	2.9	71
38	Tunable electronic and magnetic properties of twoâ€dimensional materials and their oneâ€dimensional derivatives. Wiley Interdisciplinary Reviews: Computational Molecular Science, 2016, 6, 324-350.	6.2	71
39	Stability and electronic properties of small boron nitride nanotubes. Journal of Applied Physics, 2009, 105, 084312.	1.1	69
40	Large Single-Crystal Hexagonal Boron Nitride Monolayer Domains with Controlled Morphology and Straight Merging Boundaries. Small, 2015, 11, 4497-4502.	5.2	68
41	Strain induced exciton fine-structure splitting and shift in bent ZnO microwires. Scientific Reports, 2012, 2, 452.	1.6	64
42	Layer Engineering of 2D Semiconductor Junctions. Advanced Materials, 2016, 28, 5126-5132.	11.1	63
43	Electronic and Magnetic Properties and Structural Stability of BeO Sheet and Nanoribbons. ACS Applied Materials & Interfaces, 2011, 3, 4787-4795.	4.0	62
44	Strainâ€Gradient Effect on Energy Bands in Bent ZnO Microwires. Advanced Materials, 2012, 24, 4707-4711.	11.1	62
45	Crossover from Linear Chains to a Honeycomb Network for the Nucleation of Hexagonal Boron Nitride Grown on the Ni(111) Surface. Journal of Physical Chemistry C, 2021, 125, 26542-26551.	1.5	59
46	Carrier-Tunable Magnetic Ordering in Vanadiumâ^'Naphthalene Sandwich Nanowires. Journal of the American Chemical Society, 2010, 132, 10215-10217.	6.6	57
47	Self-modulated band gap in boron nitride nanoribbons and hydrogenated sheets. Nanoscale, 2013, 5, 6381.	2.8	53
48	Tuning Magnetism in Zigzag ZnO Nanoribbons by Transverse Electric Fields. ACS Nano, 2010, 4, 2124-2128.	7.3	52
49	Flexoelectricity in Monolayer Transition Metal Dichalcogenides. Journal of Physical Chemistry Letters, 2018, 9, 6841-6846.	2.1	51
50	Near-equilibrium growth from borophene edges on silver. Science Advances, 2019, 5, eaax0246.	4.7	47
51	Stability and Electronic Properties of a Novel C-BN Heteronanotube from First-Principles Calculations. Journal of Physical Chemistry C, 2009, 113, 13108-13114.	1.5	46
52	Topochemistry of Bowtie- and Star-Shaped Metal Dichalcogenide Nanoisland Formation. Nano Letters, 2016, 16, 3696-3702.	4.5	46
53	Unraveling the Sinuous Grain Boundaries in Graphene. Advanced Functional Materials, 2015, 25, 367-373.	7.8	45
54	Gateâ€Voltage Control of Borophene Structure Formation. Angewandte Chemie - International Edition, 2017, 56, 15421-15426.	7.2	44

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55	Electric-Field- and Hydrogen-Passivation-Induced Band Modulations in Armchair ZnO Nanoribbons. Journal of Physical Chemistry C, 2010, 114, 1326-1330.	1.5	42
56	Intrinsic Metallic and Semiconducting Cubic Boron Nitride Nanofilms. Nano Letters, 2012, 12, 3650-3655.	4.5	42
57	Electronic and magnetic properties of zigzag edge graphene nanoribbons with Stoneâ€“Wales defects. Physics Letters, Section A: General, Atomic and Solid State Physics, 2009, 373, 3354-3358.	0.9	41
58	Charge-injection induced magnetism and half metallicity in single-layer hexagonal group III/V (BN, BP,) Tj ETQq0 0 0 rgBT /Overlock 10 Tf	1.5	41
59	Controlling the Functionalizations of Hexagonal Boron Nitride Structures by Carrier Doping. Journal of Physical Chemistry Letters, 2011, 2, 2168-2173.	2.1	38
60	Electronic Structures of BC₂N Nanoribbons. Journal of Physical Chemistry C, 2011, 115, 3572-3577.	1.5	37
61	Borophene Concentric Superlattices via Self-Assembly of Twin Boundaries. Nano Letters, 2020, 20, 1315-1321.	4.5	36
62	Universal Rule on Chiralityâ€Dependent Bandgaps in Graphene Antidot Lattices. Small, 2013, 9, 1405-1410.	5.2	34
63	B₄₀cluster stability, reactivity, and its planar structural precursor. Nanoscale, 2017, 9, 1805-1810.	2.8	33
64	Sliding ferroelectricity in two-dimensional MoA₂N₄(A = Si or Ge) bilayers: high polarizations and MoirÃ© potentials. Journal of Materials Chemistry A, 2021, 9, 19659-19663.	5.2	32
65	Strain-driven growth of ultra-long two-dimensional nano-channels. Nature Communications, 2020, 11, 772.	5.8	31
66	Quasi-Freestanding Bilayer Borophene on Ag(111). Nano Letters, 2022, 22, 3488-3494.	4.5	31
67	Ultrafast probes of electronâ€“hole transitions between two atomic layers. Nature Communications, 2018, 9, 1859.	5.8	30
68	Coaxial nanocable: Carbon nanotube core sheathed with boron nitride nanotube. Applied Physics Letters, 2007, 90, 133103.	1.5	29
69	Predicting two-dimensional semiconducting boron carbides. Nanoscale, 2019, 11, 11099-11106.	2.8	29
70	Electric-field-induced deformation in boron nitride nanotubes. Journal Physics D: Applied Physics, 2009, 42, 085403.	1.3	28
71	Tuning the magnetic and electronic properties of bilayer graphene nanoribbons on Si(001) by bias voltage. Physical Review B, 2010, 81, .	1.1	28
72	Electronic properties of zigzag graphene nanoribbons on Si(001). Applied Physics Letters, 2009, 95, 023107.	1.5	27

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73	Solidâ€"Vapor Reaction Growth of Transitionâ€Metal Dichalcogenide Monolayers. Angewandte Chemie - International Edition, 2016, 55, 10656-10661.	7.2	27
74	Substrate-Sensitive Graphene Oxidation. Journal of Physical Chemistry Letters, 2016, 7, 867-873.	2.1	26
75	Topological hybrid nodal-loop semimetal in a carbon allotrope constructed by interconnected Riemann surfaces. Physical Review B, 2019, 100, .	1.1	26
76	Fluorinating Hexagonal Boron Nitride/Graphene Multilayers into Hybrid Diamondlike Nanofilms with Tunable Energy Gap. Journal of Physical Chemistry C, 2011, 115, 21678-21684.	1.5	25
77	One-dimensional nearly free electron states in borophene. Nanoscale, 2019, 11, 15605-15611.	2.8	25
78	A Large Family of Synthetic Two-Dimensional Metal Hydrides. Journal of the American Chemical Society, 2019, 141, 7899-7905.	6.6	25
79	A family of all sp²-bonded carbon allotropes of topological semimetals with strain-robust nodal-lines. Journal of Materials Chemistry C, 2020, 8, 1548-1555.	2.7	24
80	Freestanding (3,0) boron nitride nanotube: Expected to be stable well over room temperature. Applied Physics Letters, 2008, 93, 223108.	1.5	20
81	Doping-stabilized two-dimensional black phosphorus. Nanoscale, 2018, 10, 7898-7904.	2.8	20
82	Magnetism in armchair BC2N nanoribbons. Applied Physics Letters, 2010, 96, 133103.	1.5	19
83	Electronic and magnetic properties of zigzag graphene nanoribbons with periodic protruded edges. Physical Review B, 2010, 82, .	1.1	18
84	Gateâ€Voltage Control of Borophene Structure Formation. Angewandte Chemie, 2017, 129, 15623-15628.	1.6	18
85	Ferromagnetism in a semiconducting Janus NbSe hydride monolayer. Journal of Materials Chemistry C, 2018, 6, 9675-9681.	2.7	18
86	Solidâ€"Vapor Reaction Growth of Transitionâ€Metal Dichalcogenide Monolayers. Angewandte Chemie, 2016, 128, 10814-10819.	1.6	17
87	van der Waals screening by graphenelike monolayers. Physical Review B, 2018, 97, .	1.1	17
88	Chemical Synthesis of Borophene: Progress and Prospective. Wuli Huaxue Xuebao/ Acta Physico - Chimica Sinica, 2019, 35, 565-571.	2.2	17
89	Dislocations as Single Photon Sources in Two-Dimensional Semiconductors. Nano Letters, 2020, 20, 4136-4143.	4.5	16
90	Direct growth of single-metal-atom chains. , 2022, 1, 245-253.		16

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91	Interface-induced warping in hybrid two-dimensional materials. Nano Research, 2015, 8, 2015-2023.	5.8	15
92	Flexoelectricity enhanced water splitting and hydrogen evolution reaction on grain boundaries of monolayer transition metal dichalcogenides. Nano Research, 2022, 15, 978-984.	5.8	15
93	Prediction of freestanding semiconducting bilayer borophenes. Nano Research, 2022, 15, 5752-5757.	5.8	15
94	Robust Quantum Anomalous Hall States in Monolayer and Few-Layer TiTe. Nano Letters, 2022, 22, 5379-5384.	4.5	15
95	Electronic properties of graphene nanoribbons stacked on boron nitride nanoribbons. Journal of Applied Physics, 2013, 113, .	1.1	14
96	Probing the Interaction of Water Molecules with Oxidized Graphene by First Principles. Journal of Physical Chemistry C, 2021, 125, 4580-4587.	1.5	14
97	Mechanistic insight into electricity generation from moving ionic droplets on graphene. Science China Materials, 2021, 64, 2242-2250.	3.5	14
98	Selective Oxidation of Carbon Nanotubes into Zigzag Graphene Nanoribbons. Journal of Physical Chemistry C, 2010, 114, 14729-14733.	1.5	13
99	Nonlinearâ€“Linear Transition of Magnetoelectric Effect in Magnetic Graphene Nanoflakes on Substrates. Journal of Physical Chemistry C, 2012, 116, 626-631.	1.5	13
100	Borophane Polymorphs. Journal of Physical Chemistry Letters, 2022, 13, 1107-1113.	2.1	12
101	Flexoelectricity in hexagonal boron nitride monolayers. Extreme Mechanics Letters, 2022, 52, 101669.	2.0	12
102	Grain boundaries in hybrid two-dimensional materials. Journal of the Mechanics and Physics of Solids, 2014, 70, 62-70.	2.3	11
103	Width-dependent phase crossover in transition metal dichalcogenide nanoribbons. Nanotechnology, 2019, 30, 075701.	1.3	11
104	Cellulose membranes as moisture-driven actuators with predetermined deformations and high load uptake. International Journal of Smart and Nano Materials, 2021, 12, 146-156.	2.0	11
105	A multiferroic vanadium phosphide monolayer with ferromagnetic half-metallicity and topological Dirac states. Nanoscale Horizons, 2022, 7, 192-197.	4.1	11
106	Homogeneous nanocables from double-walled boron-nitride nanotubes using first-principles calculations. Physical Review B, 2010, 82, .	1.1	10
107	Roomâ€Temperature Colossal Elastocaloric Effects in Threeâ€Dimensional Graphene Architectures: An Atomistic Study. Advanced Functional Materials, 2022, 32, .	7.8	10
108	Tunable Gigahertz Oscillators of Gliding Incommensurate Bilayer Graphene Sheets. Journal of Applied Mechanics, Transactions ASME, 2013, 80, .	1.1	9

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109	Strain Gradient Mediated Magnetism and Polarization in Monolayer VSe₂. Journal of Physical Chemistry C, 2019, 123, 24988-24993.	1.5	9
110	Structure and Dynamics of the Electronic Heterointerfaces in MoS₂ by First-Principles Simulations. Journal of Physical Chemistry Letters, 2020, 11, 1644-1649.	2.1	9
111	A Helical Monolayer Ice. Journal of Physical Chemistry Letters, 2020, 11, 3860-3865.	2.1	9
112	Functionalizations of boron nitride nanostructures. Science China Technological Sciences, 2021, 64, 1-10.	2.0	9
113	Phase crossover in transition metal dichalcogenide nanoclusters. Nanoscale, 2016, 8, 19154-19160.	2.8	8
114	Strain-dependent Raman analysis of the G* band in graphene. Physical Review B, 2019, 100, .	1.1	8
115	Ion Hydration under Nanoscale Confinement: Dimensionality and Scale Effects. Journal of Physical Chemistry Letters, 2022, 13, 4815-4822.	2.1	8
116	Hydrothermal Synthesis and Thermoelectric Transport Properties of Uniform Single-Crystalline Pearl-Necklace-Shaped PbTe Nanowires. Crystal Growth and Design, 2008, 8, 3878-3878.	1.4	7
117	Strength, plasticity, interlayer interactions and phase transition of low-dimensional nanomaterials under multiple fields. Acta Mechanica Solida Sinica, 2012, 25, 221-243.	1.0	7
118	Polymorphism of Segmented Grain Boundaries in Two-Dimensional Transition Metal Dichalcogenides. Nano Letters, 2021, 21, 6014-6021.	4.5	7
119	Magnetic properties of strained single-walled carbon nanotubes. Applied Physics Letters, 2007, 90, 053114.	1.5	5
120	Tunable magnetism on<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mtext>Si</mml:mtext><mml:mrow><mml:mo>(</mml:mo><mml:mrow><mml:mn>111</mml:mn> chemisorption of graphene nanoribbons. Physical Review B, 2010, 82, .	1.1	5
121	Extreme pseudomagnetic fields in carbon nanocones by simple loads. Journal of the Mechanics and Physics of Solids, 2019, 124, 1-9.	2.3	5
122	A folded ice monolayer. Physical Chemistry Chemical Physics, 2020, 22, 20388-20393.	1.3	5
123	An analog of Friedel oscillations in nanoconfined water. National Science Review, 2022, 9, .	4.6	5
124	A multiferroic iron arsenide monolayer. Nanoscale Advances, 2022, 4, 1324-1329.	2.2	5
125	Giant mechanocaloric effect of nanoconfined water near room temperature. Cell Reports Physical Science, 2022, , 100822.	2.8	5
126	Mechanics of Materials Creation: Nanotubes, Graphene, Carbyne, Borophenes. Procedia IUTAM, 2017, 21, 17-24.	1.2	4

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127	Intermediate Phase Enhances Inorganic Perovskite and Metal Oxide Interface for Efficient Photovoltaics. Joule, 2020, 4, 507-508.	11.7	4
128	Stress-dominated growth of two-dimensional materials on nonplanar substrates. Journal of the Mechanics and Physics of Solids, 2021, 157, 104645.	2.3	4
129	Structures, Mechanics, and Electronics of Borophanes. Journal of Physical Chemistry C, 2021, 125, 22917-22928.	1.5	4
130	Atomic-scale Observation of Grains and Grain Boundaries in Monolayers of WS₂. Microscopy and Microanalysis, 2014, 20, 1084-1085.	0.2	3
131	Graphene: Unraveling the Sinuous Grain Boundaries in Graphene (Adv. Funct. Mater. 3/2015). Advanced Functional Materials, 2015, 25, 496-496.	7.8	3
132	Energetics of graphene origami and their â€œspatial resolutionâ€• MRS Bulletin, 2021, 46, 481-486.	1.7	3
133	InnenrÃ¼cktitelbild: Two-Dimensional Boron Monolayers Mediated by Metal Substrates (Angew. Chem.) Tj ETQq1 1 0.784314 rgBT /Ov	1.6	2
134	Correction: Two-dimensional boron: structures, properties and applications. Chemical Society Reviews, 2017, 46, 7470-7470.	18.7	2
135	Surface multiferroics in silicon enabled by hole-carrier doping. Science Bulletin, 2019, 64, 331-336.	4.3	2
136	Cover Image, Volume 6, Issue 4. Wiley Interdisciplinary Reviews: Computational Molecular Science, 2016, 6, i-i.	6.2	0
137	Theory of two-dimensional materials: The soul of the materials. Chinese Science Bulletin, 2021, 66, 533-535.	0.4	0