Bing Huang

List of Publications by Year
in descending order

84 papers	5,217 citations	87888 38 h-index	82547 72 g-index
86 all docs	86 docs citations	86 times ranked	7723 citing authors

#	Article	IF	Citations
1	Intrinsic Currentâ"Voltage Characteristics of Graphene Nanoribbon Transistors and Effect of Edge Doping. Nano Letters, 2007, 7, 1469-1473.	9.1	548
2	Adsorption of Gas Molecules on Graphene Nanoribbons and Its Implication for Nanoscale Molecule Sensor. Journal of Physical Chemistry C, 2008, 112, 13442-13446.	3.1	488
3	Toward Intrinsic Room-Temperature Ferromagnetism in Two-Dimensional Semiconductors. Journal of the American Chemical Society, 2018, 140, 11519-11525.	13.7	280
4	Interlayer Coupling in Twisted WSe₂/WS₂ Bilayer Heterostructures Revealed by Optical Spectroscopy. ACS Nano, 2016, 10, 6612-6622.	14.6	249
5	Quantum Manifestations of Graphene Edge Stress and Edge Instability: A First-Principles Study. Physical Review Letters, 2009, 102, 166404.	7.8	243
6	Two-dimensional GaSe/MoSe ₂ misfit bilayer heterojunctions by van der Waals epitaxy. Science Advances, 2016, 2, e1501882.	10.3	239
7	Defect and impurity properties of hexagonal boron nitride: A first-principles calculation. Physical Review B, 2012, 86, .	3.2	187
8	Suppression of spin polarization in graphene nanoribbons by edge defects and impurities. Physical Review B, 2008, 77, .	3.2	178
9	Making a field effect transistor on a single graphene nanoribbon by selective doping. Applied Physics Letters, 2007, 91, 253122.	3.3	152
10	Towards Direct-Gap Silicon Phases by the Inverse Band Structure Design Approach. Physical Review Letters, 2013, 110, 118702.	7.8	136
11	Effective Control of the Charge and Magnetic States of Transition-Metal Atoms on Single-Layer Boron Nitride. Physical Review Letters, 2012, 108, 206802.	7.8	135
12	Extremely Low Density and Superâ€Compressible Graphene Cellular Materials. Advanced Materials, 2017, 29, 1701553.	21.0	126
13	Crystal and electronic structures of CuxS solar cell absorbers. Applied Physics Letters, 2012, 100, .	3.3	105
14	Van der Waals Epitaxial Growth of Two-Dimensional Single-Crystalline GaSe Domains on Graphene. ACS Nano, 2015, 9, 8078-8088.	14.6	103
15	Chemical Functionalization of Graphene Nanoribbons by Carboxyl Groups on Stone-Wales Defects. Journal of Physical Chemistry C, 2008, 112, 12003-12007.	3.1	93
16	Cu<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>2</mml:mn></mml:msub></mml:math>Zn(Sn,Ge)Se<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>4</mml:mn></mml:msub></mml:math>and Cu<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:	3.2	90
17	Alloy Engineering of Defect Properties in Semiconductors: Suppression of Deep Levels in Transition-Metal Dichalcogenides. Physical Review Letters, 2015, 115, 126806.	7.8	81
18	Strain control of magnetism in graphene decorated by transition-metal atoms. Physical Review B, 2011, 84, .	3.2	79

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19	Intrinsic Defect Physics in Indium-based Lead-free Halide Double Perovskites. Journal of Physical Chemistry Letters, 2017, 8, 4391-4396.	4.6	71
20	Origin of Reduced Efficiency in Cu(In,Ga)Se$_2$ Solar Cells With High Ga Concentration: Alloy Solubility Versus Intrinsic Defects. IEEE Journal of Photovoltaics, 2014, 4, 477-482.	2.5	69
21	Chemical Functionalization of Silicene: Spontaneous Structural Transition and Exotic Electronic Properties. Physical Review Letters, 2013, 111, 145502.	7.8	68
22	Edge stability of boron nitride nanoribbons and its application in designing hybrid BNC structures. Nano Research, 2012, 5, 62-72.	10.4	62
23	Highly stable two-dimensional silicon phosphides: Different stoichiometries and exotic electronic properties. Physical Review B, 2015, 91, .	3.2	58
24	Design of nâ€Type Transparent Conducting Oxides: The Case of Transition Metal Doping in In₂O₃. Advanced Electronic Materials, 2018, 4, 1700553.	5.1	58
25	Theoretical study of corundum as an ideal gate dielectric material for graphene transistors. Physical Review B, 2011, 84, .	3.2	56
26	Widely tunable band gaps of graphdiyne: an ab initio study. Physical Chemistry Chemical Physics, 2014, 16, 8935-8939.	2.8	56
27	Stability and electronic structure of Cu<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>2</mml:mn></mml:msub></mml:math>ZnSnS<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>4</mml:mn></mml:msub></mml:math>surfaces: First-principles study. Physical Review B, 2013, 88, .	3.2	55
28	Intrinsic half-metallic BNâ€“C nanotubes. Applied Physics Letters, 2010, 97, 043115.	3.3	54
29	Origin of the significantly enhanced optical transitions in layered boron nitride. Physical Review B, 2012, 86, .	3.2	49
30	Prediction of Novel pâ€Type Transparent Conductors in Layered Double Perovskites: A Firstâ€Principles Study. Advanced Functional Materials, 2018, 28, 1800332.	14.9	49
31	Realization of Lieb lattice in covalent-organic frameworks with tunable topology and magnetism. Nature Communications, 2020, 11, 66.	12.8	49
32	Electronic properties of boron and nitrogen doped graphene nanoribbons and its application for graphene electronics. Physics Letters, Section A: General, Atomic and Solid State Physics, 2011, 375, 845-848.	2.1	48
33	Electronic and Magnetic Properties of Partially Open Carbon Nanotubes. Journal of the American Chemical Society, 2009, 131, 17919-17925.	13.7	47
34	Overcoming the Phase Inhomogeneity in Chemically Functionalized Graphene: The Case of Graphene Oxides. Physical Review Letters, 2013, 110, 085501.	7.8	47
35	Titania Nanoflowers with High Photocatalytic Activity. Journal of the American Ceramic Society, 2006, 89, 2660-2663.	3.8	43
36	Towards graphene nanoribbon-based electronics. Frontiers of Physics in China, 2009, 4, 269-279.	1.0	43

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37	Hexagonal boron nitride and 6H-SiC heterostructures. Applied Physics Letters, 2013, 102, .	3.3	43
38	Exotic Geometrical and Electronic Properties in Hydrogenated Graphyne. Journal of Physical Chemistry C, 2013, 117, 11960-11967.	3.1	41
39	Exceptional Optoelectronic Properties of Hydrogenated Bilayer Silicene. Physical Review X, 2014, 4, .	8.9	35
40	Approaching Charge Separation Efficiency to Unity without Charge Recombination. Physical Review Letters, 2021, 126, 176401.	7.8	35
41	Tailoring the Electronic Band Gap of Graphyne. Journal of Physical Chemistry C, 2014, 118, 2463-2468.	3.1	34
42	Anomalous Dirac Plasmons in 1D Topological Electrides. Physical Review Letters, 2019, 123, 206402.	7.8	33
43	Deep-ultraviolet nonlinear optical crystals by design: A computer-aided modeling blueprint from first principles. Science China Materials, 2020, 63, 1597-1612.	6.3	33
44	First-principles study of electronic and diffusion properties of intrinsic defects in 4H-SiC. Journal of Applied Physics, 2020, 127, .	2.5	32
45	Growth of Metal Phthalocyanine on Deactivated Semiconducting Surfaces Steered by Selective Orbital Coupling. Physical Review Letters, 2015, 115, 096101.	7.8	30
46	Defect Engineering of Grain Boundaries in Leadâ€Free Halide Double Perovskites for Better Optoelectronic Performance. Advanced Functional Materials, 2019, 29, 1805870.	14.9	30
47	Hydrogen storage in alkali-metal-decorated organic molecules. Applied Physics Letters, 2008, 93, 063107.	3.3	28
48	Controlling doping in graphene through a SiC substrate: A first-principles study. Physical Review B, 2011, 83, .	3.2	27
49	Emergent Phenomena in Magnetic Two-Dimensional Materials and van der Waals Heterostructures. ACS Applied Electronic Materials, 2022, 4, 3278-3302.	4.3	26
50	Layered oxide <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi mathvariant="normal">B</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mi mathvariant="normal">S</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mi mathvariant="normal">O</mml:mi><mml:mn>9</mml:mn></mml:msub></mml:mrow></mml:math> with a deep-ultraviolet band gap and a strong and robust second-harmonic generation. Physical Review B, 2	3.2	25
51	Ab initio study of beryllium-decorated fullerenes for hydrogen storage. Journal of Applied Physics, 2010, 107, .	2.5	22
52	Prediction of room-temperature half-metallicity in layered halide double perovskites. Npj Computational Materials, 2019, 5, .	8.7	19
53	Enhanced Ability of Nanostructured Titania Film to Assist Photodegradation of Rhodamine B in Water Through Natural Aging. Journal of the American Ceramic Society, 2007, 90, 283-286.	3.8	17
54	Deepâ€Ultraviolet Nonlinearâ€Optical vanâ€derâ€Waals Beryllium Borates**. Angewandte Chemie - International Edition, 2021, 60, 16680-16686.	13.8	17

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55	The Half-Metallicity of Zigzag Graphene Nanoribbons with Asymmetric Edge Terminations. Journal of Nanoscience and Nanotechnology, 2010, 10, 5374-5378.	0.9	15
56	Quantum Spin Hall Effect and Tunable Spin Transport in As-Graphane. Nano Letters, 2017, 17, 4359-4364.	9.1	15
57	A tied Fermi liquid to Luttinger liquid model for nonlinear transport in conducting polymers. Nature Communications, 2021, 12, 58.	12.8	15
58	Beryllium-dihydrogen complexes on nanostructures. Applied Physics Letters, 2010, 96, .	3.3	14
59	Density-independent plasmons for terahertz-stable topological metamaterials. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	14
60	Stability of superconducting Nd0.8Sr0.2NiO2 thin films. Science China: Physics, Mechanics and Astronomy, 2022, 65, .	5.1	14
61	Period-doubling reconstructions of semiconductor partial dislocations. NPG Asia Materials, 2015, 7, e216-e216.	7.9	12
62	Multiple localized states and magnetic orderings in partially open zigzag carbon nanotube superlattices: An ab initio study. Journal of Chemical Physics, 2010, 133, 084702.	3.0	11
63	Universal Theory and Basic Rules of Strain-Dependent Doping Behaviors in Semiconductors. Chinese Physics Letters, 2021, 38, 087103.	3.3	9
64	Role of interlayer coupling in second harmonic generation in bilayer transition metal dichalcogenides. Physical Review B, 2022, 105, .	3.2	9
65	Comment on â€œMechanisms of Postsynthesis Doping of Boron Nitride Nanostructures with Carbon from First-Principles Simulationsâ€• Physical Review Letters, 2011, 107, 239601; discussion 239602.	7.8	8
66	Crystal Symmetry Engineering in Epitaxial Perovskite Superlattices. Advanced Functional Materials, 2021, 31, 2106466.	14.9	7
67	Temperature effect on charge-state transition levels of defects in semiconductors. Physical Review B, 2022, 105, .	3.2	7
68	Relating Gain Degradation to Defects Production in Neutron-Irradiated 4H-SiC Transistors. IEEE Transactions on Nuclear Science, 2021, 68, 312-317.	2.0	6
69	Polarizationâ€Drivenâ€Orientation Selective Growth of Singleâ€Crystalline IIIâ€Nitride Semiconductors on Arbitrary Substrates. Advanced Functional Materials, 2022, 32, .	14.9	6
70	Response to Comment on â€œPrediction of Novel pâ€Type Transparent Conductors in Layered Double Perovskites: A Firstâ€Principles Studyâ€• Advanced Functional Materials, 2020, 30, 2003149.	14.9	5
71	Exotic Structural and Optoelectronic Properties of Layered Halide Double Perovskite Polymorphs. Advanced Functional Materials, 2021, 31, 2008620.	14.9	5
72	Alloy Engineering of a Polar (Si,Ge)₂N₂O System for Controllable Second Harmonic Performance. Inorganic Chemistry, 2021, 60, 7381-7388.	4.0	5

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73	Stability and electronic structures of Cu<inf>x</inf>S solar cell absorbers. , 2012, , .		4
74	Deepâ€Ultraviolet Nonlinearâ€Optical vanâ€derâ€Waals Beryllium Borates**. Angewandte Chemie, 2021, 133, 16816-16822.	2.0	4
75	ReleasingH2molecules with a partial pressure difference without the use of temperature. Physical Review B, 2010, 82, .	3.2	3
76	XiangetÂal.Reply:. Physical Review Letters, 2014, 112, 199802.	7.8	3
77	Electronic and doping properties of hexagonal silicon carbide with stacking faults induced cubic inclusions. Journal of Applied Physics, 2021, 129, .	2.5	2
78	Functionalizing Two-Dimensional Materials for Energy Applications. , 2020, , 567-603.		2
79	Structural and electronic properties of Ge-Si, Sn-Si, and Pb-Si dimers on Si(001) from density-functional calculations. Physical Review B, 2009, 79, .	3.2	1
80	Graphene Adsorbed on Corundum Surface: Clean Interface and Band Gap Opening. Materials Research Society Symposia Proceedings, 2012, 1407, 131.	0.1	0
81	Functionalizing Two-Dimensional Materials for Energy Applications. , 2018, , 1-37.		0
82	Giant enhancement of solid solubility in monolayer alloys by selective orbital coupling. Physical Review B, 2020, 101, .	3.2	0
83	Trends of complete anion substitution on electronic, ferroelectric, and optoelectronic properties of BiFeX3 (X = O, S, Se, and Te). AIP Advances, 2021, 11, 115108.	1.3	0
84	Polarizationâ€Drivenâ€Orientation Selective Growth of Singleâ€Crystalline IIIâ€Nitride Semiconductors on Arbitrary Substrates (Adv. Funct. Mater. 14/2022). Advanced Functional Materials, 2022, 32, .	14.9	0