Zhongwu Wang

List of Publications by Year
in descending order

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82 papers	5,487 citations	66343 42 h-index	79698 73 g-index
85 all docs	85 docs citations	85 times ranked	7043 citing authors

#	Article	IF	Citations
1	Self-Assembled Colloidal Superparticles from Nanorods. Science, 2012, 338, 358-363.	12.6	332
2	Largeâ€Scale Soft Colloidal Template Synthesis of 1.4â€…nm Thick CdSe Nanosheets. Angewandte Chemie - International Edition, 2009, 48, 6861-6864.	13.8	298
3	Morphology-tuned wurtzite-type ZnS nanobelts. Nature Materials, 2005, 4, 922-927.	27.5	295
4	Nanocube Superlattices of Cesium Lead Bromide Perovskites and Pressureâ€Induced Phase Transformations at Atomic and Mesoscale Levels. Advanced Materials, 2017, 29, 1606666.	21.0	238
5	Magneto-fluorescent core-shell supernanoparticles. Nature Communications, 2014, 5, 5093.	12.8	223
6	Deviatoric Stress Driven Formation of Large Single-Crystal PbS Nanosheet from Nanoparticles and in Situ Monitoring of Oriented Attachment. Journal of the American Chemical Society, 2011, 133, 14484-14487.	13.7	168
7	Pressure Induced Nanoparticle Phase Behavior, Property, and Applications. Chemical Reviews, 2019, 119, 7673-7717.	47.7	164
8	Pressureâ€Dependent Polymorphism and Bandâ€Gap Tuning of Methylammonium Lead Iodide Perovskite. Angewandte Chemie - International Edition, 2016, 55, 6540-6544.	13.8	157
9	A quenchable superhard carbon phase synthesized by cold compression of carbon nanotubes. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 13699-13702.	7.1	153
10	Superstructures generated from truncated tetrahedral quantum dots. Nature, 2018, 561, 378-382.	27.8	143
11	Shape-Controlled Synthesis of Colloidal Superparticles from Nanocubes. Journal of the American Chemical Society, 2012, 134, 18225-18228.	13.7	121
12	Reconstructing a solid-solid phase transformation pathway in CdSe nanosheets with associated soft ligands. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 17119-17124.	7.1	120
13	Solvent-Mediated Self-Assembly of Nanocube Superlattices. Journal of the American Chemical Society, 2014, 136, 1352-1359.	13.7	120
14	Stress-induced phase transformation and optical coupling of silver nanoparticle superlattices into mechanically stable nanowires. Nature Communications, 2014, 5, 4179.	12.8	114
15	In situx-ray diffraction study of the pressure-induced phase transformation in nanocrystallineCeO2. Physical Review B, 2001, 64, .	3.2	113
16	Structural modifications of Gd₂Zr_{2-x}Ti_xO₇ pyrochlore induced by swift heavy ions: Disordering and amorphization. Journal of Materials Research, 2009, 24, 1322-1334.	2.6	110
17	Decoding the Superlattice and Interface Structure of Truncate PbS Nanocrystal-Assembled Supercrystal and Associated Interaction Forces. Journal of the American Chemical Society, 2014, 136, 12047-12055.	13.7	109
18	Correlating Superlattice Polymorphs to Internanoparticle Distance, Packing Density, and Surface Lattice in Assemblies of PbS Nanoparticles. Nano Letters, 2013, 13, 1303-1311.	9.1	107

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19	Nanostructured Gold Architectures Formed through High Pressure-Driven Sintering of Spherical Nanoparticle Arrays. Journal of the American Chemical Society, 2010, 132, 12826-12828.	13.7	93
20	Cubic to Tetragonal Phase Transformation in Cold-Compressed Pd Nanocubes. Nano Letters, 2008, 8, 972-975.	9.1	89
21	Raman spectroscopic study on pressure-induced amorphization in nanocrystalline anatase (TiO 2). Solid State Communications, 2001, 118, 75-78.	1.9	83
22	Pressureâ€Driven Assembly of Spherical Nanoparticles and Formation of 1Dâ€Nanostructure Arrays. Angewandte Chemie - International Edition, 2010, 49, 8431-8434.	13.8	78
23	Phase Transitions of Formamidinium Lead Iodide Perovskite under Pressure. Journal of the American Chemical Society, 2018, 140, 13952-13957.	13.7	78
24	Pressure-Induced Phase Transformation and Band-Gap Engineering of Formamidinium Lead Iodide Perovskite Nanocrystals. Journal of Physical Chemistry Letters, 2018, 9, 4199-4205.	4.6	78
25	Structural Control of Nanocrystal Superlattices Using Organic Guest Molecules. Journal of the American Chemical Society, 2012, 134, 2868-2871.	13.7	76
26	Pressure-Induced Phase Engineering of Gold Nanostructures. Journal of the American Chemical Society, 2018, 140, 15783-15790.	13.7	68
27	X-ray diffraction study on pressure-induced phase transformations in nanocrystalline anatase/rutile (TiO2). Journal of Physics Condensed Matter, 2001, 13, 8317-8323.	1.8	66
28	Comparing the Structural Stability of PbS Nanocrystals Assembled in fcc and bcc Superlattice Allotropes. Journal of the American Chemical Society, 2012, 134, 10787-10790.	13.7	66
29	Pressure compression of CdSe nanoparticles into luminescent nanowires. Science Advances, 2017, 3, e1602916.	10.3	66
30	An Obtuse Rhombohedral Superlattice Assembled by Pt Nanocubes. Nano Letters, 2015, 15, 6254-6260.	9.1	65
31	Pressure-Enabled Synthesis of Hetero-Dimers and Hetero-Rods through Intraparticle Coalescence and Interparticle Fusion of Quantum-Dot-Au Satellite Nanocrystals. Journal of the American Chemical Society, 2017, 139, 8408-8411.	13.7	62
32	Pressure Processing of Nanocube Assemblies Toward Harvesting of a Metastable PbS Phase. Advanced Materials, 2015, 27, 4544-4549.	21.0	61
33	Formation of self-assembled gold nanoparticle supercrystals with facet-dependent surface plasmonic coupling. Nature Communications, 2018, 9, 2365.	12.8	61
34	Tilted Face-Centered-Cubic Supercrystals of PbS Nanocubes. Nano Letters, 2012, 12, 4409-4413.	9.1	59
35	Integrating in situ high pressure small and wide angle synchrotron x-ray scattering for exploiting new physics of nanoparticle supercrystals. Review of Scientific Instruments, 2010, 81, 093902.	1.3	57
36	Size-Induced Reduction of Transition Pressure and Enhancement of Bulk Modulus of AlN Nanocrystals. Journal of Physical Chemistry B, 2004, 108, 11506-11508.	2.6	56

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37	Stress-Induced Nanoparticle Crystallization. Journal of the American Chemical Society, 2014, 136, 7634-7636.	13.7	52
38	Mapping Nanostructure: A Systematic Enumeration of Nanomaterials by Assembling Nanobuilding Blocks at Crystallographic Positions. ACS Nano, 2008, 2, 1237-1251.	14.6	50
39	Controlling Nanoparticle Orientations in the Self-Assembly of Patchy Quantum Dot-Gold Heterostructural Nanocrystals. Journal of the American Chemical Society, 2019, 141, 6013-6021.	13.7	49
40	Competing Interactions between Various Entropic Forces toward Assembly of Pt₃Ni Octahedra into a Body-Centered Cubic Superlattice. Nano Letters, 2016, 16, 2792-2799.	9.1	48
41	High Pressure Structural and Optical Properties of Two-Dimensional Hybrid Halide Perovskite (CH₃NH₃)₃Bi₂Br₉. Inorganic Chemistry, 2019, 58, 1621-1626.	4.0	46
42	Regulating Multiple Variables To Understand the Nucleation and Growth and Transformation of PbS Nanocrystal Superlattices. Journal of the American Chemical Society, 2017, 139, 14476-14482.	13.7	42
43	A simple model for assessing the high pressure melting of metals: nickel, aluminum and platinum. Physica B: Condensed Matter, 2001, 293, 408-416.	2.7	41
44	Reversal of Hallâ€“Petch Effect in Structural Stability of PbTe Nanocrystals and Associated Variation of Phase Transformation. Nano Letters, 2011, 11, 5531-5536.	9.1	39
45	Pressure induced increase of particle size and resulting weakening of elastic stiffness of CeO2 nanocrystals. Applied Physics Letters, 2004, 85, 124-126.	3.3	37
46	Understanding Fe₃O₄ Nanocube Assembly with Reconstruction of a Consistent Superlattice Phase Diagram. Journal of the American Chemical Society, 2019, 141, 3198-3206.	13.7	37
47	Pressure induced phase transformations in nanocrystalline maghemite (Î³-Fe2O3). Solid State Communications, 2002, 123, 195-200.	1.9	36
48	Size-Dependent Structural Stability and Tuning Mechanism: A Case of Zinc Sulfide. Journal of Physical Chemistry C, 2009, 113, 4286-4295.	3.1	33
49	Pressure-Induced Switching between Amorphization and Crystallization in PbTe Nanoparticles. Nano Letters, 2013, 13, 3729-3735.	9.1	33
50	Structure stability, fracture, and tuning mechanism of CdSe nanobelts. Applied Physics Letters, 2007, 90, 113115.	3.3	32
51	The Strongest Particle: Size-Dependent Elastic Strength and Debye Temperature of PbS Nanocrystals. Journal of Physical Chemistry Letters, 2014, 5, 3688-3693.	4.6	31
52	Superfast assembly and synthesis of gold nanostructures using nanosecond low-temperature compression via magnetic pulsed power. Nature Communications, 2017, 8, 14778.	12.8	31
53	Macroscale Lateral Alignment of Semiconductor Nanorods into Freestanding Thin Films. Journal of the American Chemical Society, 2013, 135, 6022-6025.	13.7	30
54	Energy landscape of self-assembled superlattices of PbSe nanocrystals. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 9054-9057.	7.1	29

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55	Entropy-Driven Pt₃Co Nanocube Assembles and Thermally Mediated Electrical Conductivity with Anisotropic Variation of the Rhombohedral Superlattice. Nano Letters, 2017, 17, 362-367.	9.1	29
56	Size Dependence of Cubic to Trigonal Structural Distortion in Silver Micro- and Nanocrystals under High Pressure. Journal of Physical Chemistry C, 2008, 112, 20135-20137.	3.1	27
57	Anomalous Quasihydrostaticity and Enhanced Structural Stability of 3 nm Nanoceria. Journal of Physical Chemistry C, 2007, 111, 11756-11759.	3.1	25
58	Optical properties of PbS nanocrystal quantum dots at ambient and elevated pressure. Physical Chemistry Chemical Physics, 2014, 16, 8515-8520.	2.8	24
59	Pressureâ€Dependent Polymorphism and Bandâ€Gap Tuning of Methylammonium Lead Iodide Perovskite. Angewandte Chemie, 2016, 128, 6650-6654.	2.0	24
60	In Situ Constructing the Kinetic Roadmap of Octahedral Nanocrystal Assembly Toward Controlled Superlattice Fabrication. Journal of the American Chemical Society, 2021, 143, 4234-4243.	13.7	23
61	Xâ€Ray Induced Synthesis of 8H Diamond. Advanced Materials, 2008, 20, 3303-3307.	21.0	22
62	Pressureâ€Tuned Structure and Property of Optically Active Nanocrystals. Advanced Materials, 2016, 28, 1989-1993.	21.0	22
63	Critical pressure for weakening of size-induced stiffness in spinel-structure Si3N4 nanocrystals. Applied Physics Letters, 2003, 83, 3174-3176.	3.3	19
64	Supercrystallographic Reconstruction of 3D Nanorod Assembly with Collectively Anisotropic Upconversion Fluorescence. Nano Letters, 2020, 20, 7367-7374.	9.1	17
65	MATERIALS SCIENCE: High-Pressure Microscopy. Science, 2006, 312, 1149-1150.	12.6	16
66	Ammonia molecule rotation of pressure-induced phase transition in ammonia hemihydrates 2NH3Â·H2O. RSC Advances, 2012, 2, 4920.	3.6	14
67	Porous Ice Phases with VI and Distorted VII Structures Constrained in Nanoporous Silica. Nano Letters, 2014, 14, 6554-6558.	9.1	11
68	Pressure Dependence of Electrical Conductivity of Black Titania Hydrogenated at Different Temperatures. Journal of Physical Chemistry C, 2019, 123, 4094-4102.	3.1	11
69	Thicknessâ€Dependent Structural Stability and Anisotropy of Black Phosphorus. Advanced Electronic Materials, 2019, 5, 1800712.	5.1	11
70	Pressure-induced phase transformation in Î²-eucryptite: An X-ray diffraction and density functional theory study. Scripta Materialia, 2016, 122, 64-67.	5.2	10
71	Supercrystallography-Based Decoding of Structure and Driving Force of Nanocrystal Assembly. Materials, 2019, 12, 3771.	2.9	10
72	Bulk Grain-Boundary Materials from Nanocrystals. CheM, 2021, 7, 509-525.	11.7	10

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73	Compressibility of synthetic glaucophane. Physics and Chemistry of Minerals, 2010, 37, 219-226.	0.8	9
74	The Nanocrystal Superlattice Pressure Cell: A Novel Approach To Study Molecular Bundles under Uniaxial Compression. Nano Letters, 2014, 14, 4763-4766.	9.1	9
75	Directing Gold Nanoparticles into Freeâ€Standing Honeycombâ€Like Ordered Mesoporous Superstructures. Small, 2019, 15, e1901304.	10.0	8
76	Pressure-Induced Phase Transitions and Bandgap-Tuning Effect of Methylammonium Lead Iodide Perovskite. MRS Advances, 2018, 3, 1825-1830.	0.9	7
77	Experimental and theoretical investigation of a mesoporous K_xWO₃material having superior mechanical strength. Nanoscale, 2016, 8, 2937-2943.	5.6	5
78	Synchrotron x-ray diffraction analysis of gadolinium and lanthanum titanate oxides irradiated by xenon and tantalum swift heavy ions. Materials Research Society Symposia Proceedings, 2015, 1743, 26.	0.1	2
79	Investigations of the Mechanical and Hydrothermal Stabilities of SBA-15 and Al-SBA-15 Mesoporous Materials. MRS Advances, 2016, 1, 2453-2458.	0.9	2
80	Black Phosphorus: Thickness-Dependent Structural Stability and Anisotropy of Black Phosphorus (Adv. Electron. Mater. 3/2019). Advanced Electronic Materials, 2019, 5, 1970012.	5.1	2
81	Nanocrystals: Pressureâ€Tuned Structure and Property of Optically Active Nanocrystals (Adv. Mater.) Tj ETQq1 1 0.784314 rgBT /Ove	21.0	0
82	Superstructures: Directing Gold Nanoparticles into Freeâ€Standing Honeycombâ€Like Ordered Mesoporous Superstructures (Small 31/2019). Small, 2019, 15, 1970165.	10.0	0