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	Bulk Grain-Boundary Materials from Nanocrystals. CheM, 2021, 7, 509-525.	11.7	10
2	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
3	Supercrystallographic Reconstruction of 3D Nanorod Assembly with Collectively Anisotropic Upconversion Fluorescence. Nano Letters, 2020, 20, 7367-7374.	9.1	17
4	Superstructures: Directing Gold Nanoparticles into Freeâ€Standing Honeycombâ€Like Ordered Mesoporous Superstructures (Small 31/2019). Small, 2019, 15, 1970165.	10.0	0
5	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
6	Pressure Dependence of Electrical Conductivity of Black Titania Hydrogenated at Different Temperatures. Journal of Physical Chemistry C, 2019, 123, 4094-4102.	3.1	11
7	Directing Gold Nanoparticles into Freeâ€Standing Honeycombâ€Like Ordered Mesoporous Superstructures. Small, 2019, 15, e1901304.	10.0	8
8	Pressure Induced Nanoparticle Phase Behavior, Property, and Applications. Chemical Reviews, 2019, 119, 7673-7717.	47.7	164
9	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
10	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
11	Supercrystallography-Based Decoding of Structure and Driving Force of Nanocrystal Assembly. Materials, 2019, 12, 3771.	2.9	10
12	Thicknessâ€Dependent Structural Stability and Anisotropy of Black Phosphorus. Advanced Electronic Materials, 2019, 5, 1800712.	5.1	11
13	High Pressure Structural and Optical Properties of Two-Dimensional Hybrid Halide Perovskite (CH₃NH₃)₃Bi₂Br₉. Inorganic Chemistry, 2019, 58, 1621-1626.	4.0	46
14	Pressure-Induced Phase Transitions and Bandgap-Tuning Effect of Methylammonium Lead Iodide Perovskite. MRS Advances, 2018, 3, 1825-1830.	0.9	7
15	Phase Transitions of Formamidinium Lead Iodide Perovskite under Pressure. Journal of the American Chemical Society, 2018, 140, 13952-13957.	13.7	78
16	Pressure-Induced Phase Engineering of Gold Nanostructures. Journal of the American Chemical Society, 2018, 140, 15783-15790.	13.7	68
17	Superstructures generated from truncated tetrahedral quantum dots. Nature, 2018, 561, 378-382.	27.8	143
18	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

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19	Formation of self-assembled gold nanoparticle supercrystals with facet-dependent surface plasmonic coupling. Nature Communications, 2018, 9, 2365.	12.8	61
20	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
21	Pressure compression of CdSe nanoparticles into luminescent nanowires. Science Advances, 2017, 3, e1602916.	10.3	66
22	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
23	Superfast assembly and synthesis of gold nanostructures using nanosecond low-temperature compression via magnetic pulsed power. Nature Communications, 2017, 8, 14778.	12.8	31
24	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
25	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
26	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
27	Nanocrystals: Pressureâ€Tuned Structure and Property of Optically Active Nanocrystals (Adv. Mater.) Tj ETQq1 1 0.784314 rgBT /Ove	21.0	0
28	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
29	Pressureâ€Dependent Polymorphism and Bandâ€Gap Tuning of Methylammonium Lead Iodide Perovskite. Angewandte Chemie - International Edition, 2016, 55, 6540-6544.	13.8	157
30	Pressureâ€Dependent Polymorphism and Bandâ€Gap Tuning of Methylammonium Lead Iodide Perovskite. Angewandte Chemie, 2016, 128, 6650-6654.	2.0	24
31	Pressureâ€Tuned Structure and Property of Optically Active Nanocrystals. Advanced Materials, 2016, 28, 1989-1993.	21.0	22
32	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
33	Experimental and theoretical investigation of a mesoporous K_xWO₃material having superior mechanical strength. Nanoscale, 2016, 8, 2937-2943.	5.6	5
34	Pressure Processing of Nanocube Assemblies Toward Harvesting of a Metastable PbS Phase. Advanced Materials, 2015, 27, 4544-4549.	21.0	61
35	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
36	An Obtuse Rhombohedral Superlattice Assembled by Pt Nanocubes. Nano Letters, 2015, 15, 6254-6260.	9.1	65

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37	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
38	Porous Ice Phases with VI and Distorted VII Structures Constrained in Nanoporous Silica. Nano Letters, 2014, 14, 6554-6558.	9.1	11
39	Optical properties of PbS nanocrystal quantum dots at ambient and elevated pressure. Physical Chemistry Chemical Physics, 2014, 16, 8515-8520.	2.8	24
40	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
41	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
42	Magneto-fluorescent core-shell supernanoparticles. Nature Communications, 2014, 5, 5093.	12.8	223
43	The Nanocrystal Superlattice Pressure Cell: A Novel Approach To Study Molecular Bundles under Uniaxial Compression. Nano Letters, 2014, 14, 4763-4766.	9.1	9
44	Stress-Induced Nanoparticle Crystallization. Journal of the American Chemical Society, 2014, 136, 7634-7636.	13.7	52
45	Solvent-Mediated Self-Assembly of Nanocube Superlattices. Journal of the American Chemical Society, 2014, 136, 1352-1359.	13.7	120
46	Stress-induced phase transformation and optical coupling of silver nanoparticle superlattices into mechanically stable nanowires. Nature Communications, 2014, 5, 4179.	12.8	114
47	Pressure-Induced Switching between Amorphization and Crystallization in PbTe Nanoparticles. Nano Letters, 2013, 13, 3729-3735.	9.1	33
48	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
49	Macroscale Lateral Alignment of Semiconductor Nanorods into Freestanding Thin Films. Journal of the American Chemical Society, 2013, 135, 6022-6025.	13.7	30
50	Self-Assembled Colloidal Superparticles from Nanorods. Science, 2012, 338, 358-363.	12.6	332
51	Ammonia molecule rotation of pressure-induced phase transition in ammonia hemihydrates 2NH3Â·H2O. RSC Advances, 2012, 2, 4920.	3.6	14
52	Structural Control of Nanocrystal Superlattices Using Organic Guest Molecules. Journal of the American Chemical Society, 2012, 134, 2868-2871.	13.7	76
53	Shape-Controlled Synthesis of Colloidal Superparticles from Nanocubes. Journal of the American Chemical Society, 2012, 134, 18225-18228.	13.7	121
54	Tilted Face-Centered-Cubic Supercrystals of PbS Nanocubes. Nano Letters, 2012, 12, 4409-4413.	9.1	59

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55	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
56	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
57	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
58	Compressibility of synthetic glaucophane. Physics and Chemistry of Minerals, 2010, 37, 219-226.	0.8	9
59	Pressureâ€Driven Assembly of Spherical Nanoparticles and Formation of 1Dâ€Nanostructure Arrays. Angewandte Chemie - International Edition, 2010, 49, 8431-8434.	13.8	78
60	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
61	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
62	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
63	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
64	Largeâ€Scale Soft Colloidal Template Synthesis of 1.4â€…nm Thick CdSe Nanosheets. Angewandte Chemie - International Edition, 2009, 48, 6861-6864.	13.8	298
65	Size-Dependent Structural Stability and Tuning Mechanism: A Case of Zinc Sulfide. Journal of Physical Chemistry C, 2009, 113, 4286-4295.	3.1	33
66	Xâ€Ray Induced Synthesis of 8H Diamond. Advanced Materials, 2008, 20, 3303-3307.	21.0	22
67	Cubic to Tetragonal Phase Transformation in Cold-Compressed Pd Nanocubes. Nano Letters, 2008, 8, 972-975.	9.1	89
68	Mapping Nanostructure: A Systematic Enumeration of Nanomaterials by Assembling Nanobuilding Blocks at Crystallographic Positions. ACS Nano, 2008, 2, 1237-1251.	14.6	50
69	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
70	Structure stability, fracture, and tuning mechanism of CdSe nanobelts. Applied Physics Letters, 2007, 90, 113115.	3.3	32
71	Anomalous Quasihydrostaticity and Enhanced Structural Stability of 3 nm Nanoceria. Journal of Physical Chemistry C, 2007, 111, 11756-11759.	3.1	25
72	MATERIALS SCIENCE: High-Pressure Microscopy. Science, 2006, 312, 1149-1150.	12.6	16

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73	Morphology-tuned wurtzite-type ZnS nanobelts. Nature Materials, 2005, 4, 922-927.	27.5	295
74	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
75	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
76	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
77	Critical pressure for weakening of size-induced stiffness in spinel-structure Si3N4 nanocrystals. Applied Physics Letters, 2003, 83, 3174-3176.	3.3	19
78	Pressure induced phase transformations in nanocrystalline maghemite (Î³-Fe2O3). Solid State Communications, 2002, 123, 195-200.	1.9	36
79	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
80	In situx-ray diffraction study of the pressure-induced phase transformation in nanocrystallineCeO2. Physical Review B, 2001, 64, .	3.2	113
81	Raman spectroscopic study on pressure-induced amorphization in nanocrystalline anatase (TiO 2). Solid State Communications, 2001, 118, 75-78.	1.9	83
82	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