Hengzhong Zhang

List of Publications by Year
in descending order

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78 papers	11,700 citations	70961 41 h-index	71532 76 g-index
78 all docs	78 docs citations	78 times ranked	13836 citing authors

#	Article	IF	Citations
1	Deformation behavior of high-entropy oxide (Mg,Co,Ni,Cu,Zn)O under extreme compression. Scripta Materialia, 2022, 219, 114879.	2.6	6
2	Ultra-incompressible High-Entropy Diborides. Journal of Physical Chemistry Letters, 2021, 12, 3106-3113.	2.1	17
3	Structural Stability of l-Cystine under Extreme Conditions. ACS Earth and Space Chemistry, 2021, 5, 1525-1534.	1.2	3
4	Hollow structured black TiO2 with thickness-controllable microporous shells for enhanced visible-light-driven photocatalysis. Microporous and Mesoporous Materials, 2021, 323, 111228.	2.2	18
5	Pressure-induced suppression of Jahnâ€“Teller distortions and enhanced electronic properties in high-entropy oxide (Mg0.2Ni0.2Co0.2Zn0.2Cu0.2)O. Applied Physics Letters, 2021, 119, .	1.5	4
6	Metallization and Superconductivity in the van der Waals Compound CuP₂Se through Pressure-Tuning of the Interlayer Coupling. Journal of the American Chemical Society, 2021, 143, 20343-20355.	6.6	10
7	High-Pressure Phase Transitions in Densely Packed Nanocrystallites of TiO₂-II. Journal of Physical Chemistry C, 2020, 124, 1197-1206.	1.5	4
8	High-pressure strengthening in ultrafine-grained metals. Nature, 2020, 579, 67-72.	13.7	96
9	Differentiating the Electrical and Optoelectrical Properties of Oxysulfides La₂Ta₂MS₂O₈ (M = Zr, Ti) via Application of Pressure. Journal of Physical Chemistry C, 2020, 124, 14477-14484.	1.5	5
10	Stability and Compressibility of Cation-Doped High-Entropy Oxide MgCoNiCuZnO₅. Journal of Physical Chemistry C, 2019, 123, 17735-17744.	1.5	50
11	Pressure Dependence of Electrical Conductivity of Black Titania Hydrogenated at Different Temperatures. Journal of Physical Chemistry C, 2019, 123, 4094-4102.	1.5	11
12	Revealing the ductility of nanoceramic MgAl₂O₄. Journal of Materials Research, 2019, 34, 1489-1498.	1.2	6
13	Large bandgap of pressurized trilayer graphene. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 9186-9190.	3.3	59
14	Pressure-Induced Phase Transitions of Natural Brookite. ACS Earth and Space Chemistry, 2019, 3, 844-853.	1.2	5
15	Mesoporous hollow black TiO₂ with controlled lattice disorder degrees for highly efficient visible-light-driven photocatalysis. RSC Advances, 2019, 9, 36907-36914.	1.7	15
16	A Model for Nucleation When Nuclei Are Nonstoichiometric: Understanding the Precipitation of Iron Oxyhydroxide Nanoparticles. Crystal Growth and Design, 2016, 16, 5726-5737.	1.4	19
17	Synchrotron-based high-pressure research in materials science. MRS Bulletin, 2016, 41, 473-478.	1.7	7
18	Nanocrystals in compression: unexpected structural phase transition and amorphization due to surface impurities. Nanoscale, 2016, 8, 11803-11809.	2.8	10

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19	Precipitation pathways for ferrihydrite formation in acidic solutions. Geochimica Et Cosmochimica Acta, 2016, 172, 247-264.	1.6	67
20	Crystallization by particle attachment in synthetic, biogenic, and geologic environments. Science, 2015, 349, aaa6760.	6.0	1,467
21	Molecular Dynamics Simulation Study of the Early Stages of Nucleation of Iron Oxyhydroxide Nanoparticles in Aqueous Solutions. Journal of Physical Chemistry B, 2015, 119, 10630-10642.	1.2	36
22	Nanocrystal growth via oriented attachment. CrystEngComm, 2014, 16, 1407.	1.3	22
23	Interatomic Coulombic interactions as the driving force for oriented attachment. CrystEngComm, 2014, 16, 1568-1578.	1.3	97
24	Aggregation-induced growth and transformation of Î²-FeOOH nanorods to micron-sized Î±-Fe₂O₃spindles. CrystEngComm, 2014, 16, 1451-1458.	1.3	93
25	Kinetics of crystal growth of nanogoethite in aqueous solutions containing nitrate and sulfate anions. CrystEngComm, 2014, 16, 1466-1471.	1.3	18
26	Investigating Processes of Nanocrystal Formation and Transformation via Liquid Cell TEM. Microscopy and Microanalysis, 2014, 20, 425-436.	0.2	94
27	A Unified Description of Attachment-Based Crystal Growth. ACS Nano, 2014, 8, 6526-6530.	7.3	121
28	Structural Characteristics and Mechanical and Thermodynamic Properties of Nanocrystalline TiO₂. Chemical Reviews, 2014, 114, 9613-9644.	23.0	285
29	Titania nanorods curve to lower their energy. Nanoscale, 2013, 5, 6742.	2.8	8
30	In Situ Structural Characterization of Ferric Iron Dimers in Aqueous Solutions: Identification of Î¼-Oxo Species. Inorganic Chemistry, 2013, 52, 6788-6797.	1.9	51
31	Compressibility and structural stability of nanoparticulate goethite. RSC Advances, 2012, 2, 6768.	1.7	6
32	Aggregation-Induced Fast Crystal Growth of SnO₂ Nanocrystals. Journal of the American Chemical Society, 2012, 134, 16228-16234.	6.6	57
33	Early Stage Formation of Iron Oxyhydroxides during Neutralization of Simulated Acid Mine Drainage Solutions. Environmental Science & Technology, 2012, 46, 8140-8147.	4.6	74
34	Energy Calculations Predict Nanoparticle Attachment Orientations and Asymmetric Crystal Formation. Journal of Physical Chemistry Letters, 2012, 3, 2882-2886.	2.1	93
35	Size-Dependent Bandgap of Nanogoethite. Journal of Physical Chemistry C, 2011, 115, 17704-17710.	1.5	66
36	Response of nanoparticle structure to different types of surface environments: Wide-angle x-ray scattering and molecular dynamics simulations. Physical Review B, 2010, 81, .	1.1	29

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37	Particle Size and pH Effects on Nanoparticle Dissolution. Journal of Physical Chemistry C, 2010, 114, 14876-14884.	1.5	111
38	The size dependence of the surface free energy of titania nanocrystals. Physical Chemistry Chemical Physics, 2009, 11, 2553.	1.3	109
39	Identification and Growth Mechanism of ZnS Nanoparticles with Mixed Cubic and Hexagonal Stacking. Journal of Physical Chemistry C, 2009, 113, 9681-9687.	1.5	31
40	Size-dependent elasticity of nanocrystalline titania. Physical Review B, 2009, 79, .	1.1	53
41	Anatase Coarsening Kinetics under Hydrothermal Conditions As a Function of Ph and Temperature. Chemistry of Materials, 2008, 20, 3443-3449.	3.2	63
42	Atomic structure of nanometer-sized amorphous<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mtext>TiO</mml:mtext></mml:mrow><mml:mn>2</mml:mn></mml:msu Physical Review B, 2008, 78, .	1.1	164
43	Interaction between Water Molecules and Zinc Sulfide Nanoparticles Studied by Temperature-Programmed Desorption and Molecular Dynamics Simulations. Journal of Physical Chemistry A, 2007, 111, 5008-5014.	1.1	34
44	Polymorphic Transformations and Particle Coarsening in Nanocrystalline Titania Ceramic Powders and Membranes. Journal of Physical Chemistry C, 2007, 111, 6621-6629.	1.5	43
45	Phase Stability and Transformation in Titania Nanoparticles in Aqueous Solutions Dominated by Surface Energy. Journal of Physical Chemistry C, 2007, 111, 1962-1968.	1.5	141
46	Mechanism of Inhibition of Nanoparticle Growth and Phase Transformation by Surface Impurities. Physical Review Letters, 2007, 98, 106103.	2.9	30
47	Surface Chemistry Controls Crystallinity of ZnS Nanoparticles. Nano Letters, 2006, 6, 605-610.	4.5	80
48	Kinetically controlled formation of a novel nanoparticulate ZnS with mixed cubic and hexagonal stacking. Journal of Materials Chemistry, 2006, 16, 249-254.	6.7	44
49	WAXS and PDF-Based Analyses of Chromium Doping in Nanocrystalline Titania (Anatase and Brookite). Materials Research Society Symposia Proceedings, 2006, 915, 1.	0.1	0
50	Characterization of Titanium Dioxide Nanoparticles Using Molecular Dynamics Simulations. Journal of Physical Chemistry B, 2005, 109, 15243-15249.	1.2	197
51	Size Dependence of the Kinetic Rate Constant for Phase Transformation in TiO2Nanoparticles. Chemistry of Materials, 2005, 17, 3421-3425.	3.2	127
52	Reversible, Surface-Controlled Structure Transformation in Nanoparticles Induced by an Aggregation State. Physical Review Letters, 2004, 92, 155501.	2.9	69
53	Analysis and simulation of the structure of nanoparticles that undergo a surface-driven structural transformation. Journal of Chemical Physics, 2004, 120, 11785-11795.	1.2	40
54	Aggregation, Coarsening, and Phase Transformation in ZnS Nanoparticles Studied by Molecular Dynamics Simulations. Nano Letters, 2004, 4, 713-718.	4.5	89

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55	Nanoparticles: Strained and Stiff. Science, 2004, 305, 651-654.	6.0	420
56	Special phase transformation and crystal growth pathways observed in nanoparticlesâ€. Geochemical Transactions, 2003, 4, 1.	1.8	136
57	Water-driven structure transformation in nanoparticles at room temperature. Nature, 2003, 424, 1025-1029.	13.7	427
58	The Role of Oriented Attachment Crystal Growth in Hydrothermal Coarsening of Nanocrystalline ZnS. Journal of Physical Chemistry B, 2003, 107, 10470-10475.	1.2	161
59	Molecular Dynamics Simulations, Thermodynamic Analysis, and Experimental Study of Phase Stability of Zinc Sulfide Nanoparticles. Journal of Physical Chemistry B, 2003, 107, 13051-13060.	1.2	180
60	Two-Stage Crystal-Growth Kinetics Observed during Hydrothermal Coarsening of Nanocrystalline ZnS. Nano Letters, 2003, 3, 373-378.	4.5	370
61	Kinetics of Crystallization and Crystal Growth of Nanocrystalline Anatase in Nanometer-Sized Amorphous Titania. Chemistry of Materials, 2002, 14, 4145-4154.	3.2	238
62	1. Nanoparticles in the Environment. , 2001, , 1-58.		11
63	Preparing Single-Phase Nanocrystalline Anatase from Amorphous Titania with Particle Sizes Tailored by Temperature. Nano Letters, 2001, 1, 81-85.	4.5	194
64	Understanding Polymorphic Phase Transformation Behavior during Growth of Nanocrystalline Aggregates:Â Insights from TiO2. Journal of Physical Chemistry B, 2000, 104, 3481-3487.	1.2	1,383
65	Phase transformation of nanocrystalline anatase-to-rutile via combined interface and surface nucleation. Journal of Materials Research, 2000, 15, 437-448.	1.2	331
66	Aggregation-Based Crystal Growth and Microstructure Development in Natural Iron Oxyhydroxide Biomineralization Products. Science, 2000, 289, 751-754.	6.0	1,650
67	New kinetic model for the nanocrystalline anatase-to-rutile transformation revealing rate dependence on number of particles. American Mineralogist, 1999, 84, 528-535.	0.9	249
68	Enhanced Adsorption of Molecules on Surfaces of Nanocrystalline Particles. Journal of Physical Chemistry B, 1999, 103, 4656-4662.	1.2	238
69	Thermodynamic analysis of phase stability of nanocrystalline titania. Journal of Materials Chemistry, 1998, 8, 2073-2076.	6.7	1,173
70	Determination of the entropy change for electrode reaction and dilute enthalpy of some ions by thermo-eletrochemical technology. Central South University, 1998, 5, 38-40.	0.5	5
71	A model for exploring particle size and temperature dependence of excess heat capacities of nanocrystalline substances. Scripta Materialia, 1998, 10, 185-194.	0.5	22
72	Phase Stability in the Nanocrystalline Tio2 System. Materials Research Society Symposia Proceedings, 1997, 481, 619.	0.1	6

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73	Coupling microcalorimeter with electrochemical instruments for thermoelectrochemical research. Thermochimica Acta, 1997, 303, 11-15.	1.2	7
74	Melting behaviour of oxide systems for heterogeneous transmutation of actinides. I. The systems Puî—¸Alî—¸O and Puî—¸Mgî—¸O. Journal of Nuclear Materials, 1997, 249, 223-230.	1.3	21
75	Melting behaviour of oxide systems for heterogeneous transmutation of actinides. II. The system MgOâ€“Al2O3â€“PuO2. Journal of Nuclear Materials, 1997, 250, 83-87.	1.3	3
76	Melting behaviour of oxide systems for heterogeneous transmutation of actinides. III. The system Amâ€“Mgâ€“O. Journal of Nuclear Materials, 1997, 250, 88-95.	1.3	12
77	Correlating thermochemical data of the oxygen non-stoichiometric compound YBa2Cu3O7 â€“xwith the oxygen content. Journal of Materials Chemistry, 1996, 6, 615-617.	6.7	2
78	Calorimetry of electrode reaction under linear sweep-current polarization. Journal of Thermal Analysis, 1995, 45, 151-156.	0.7	7