Zachary D Hood

List of Publications by Year
in descending order

101 papers	5,922 citations	66343 42 h-index	76900 74 g-index
110 all docs	110 docs citations	110 times ranked	7753 citing authors

#	Article	IF	Citations
1	Processing thin but robust electrolytes for solid-state batteries. Nature Energy, 2021, 6, 227-239.	39.5	328
2	Oneâ€Step Synthesis of Nb₂O₅/C/Nb₂C (MXene) Composites and Their Use as Photocatalysts for Hydrogen Evolution. ChemSusChem, 2018, 11, 688-699.	6.8	315
3	2D/2D heterojunction of Ti₃C₂/g-C₃N₄ nanosheets for enhanced photocatalytic hydrogen evolution. Nanoscale, 2019, 11, 8138-8149.	5.6	289
4	Titania Composites with 2â€‰D Transition Metal Carbides as Photocatalysts for Hydrogen Production under Visibleâ€Light Irradiation. ChemSusChem, 2016, 9, 1490-1497.	6.8	253
5	Local electronic structure variation resulting in Li â€˜filamentâ€™ formation within solid electrolytes. Nature Materials, 2021, 20, 1485-1490.	27.5	226
6	An Airâ€Stable Na₃SbS₄ Superionic Conductor Prepared by a Rapid and Economic Synthetic Procedure. Angewandte Chemie - International Edition, 2016, 55, 8551-8555.	13.8	183
7	Monolayer Ti₃C₂<i>T</i>_{<i>x</i>} as an Effective Co-catalyst for Enhanced Photocatalytic Hydrogen Production over TiO₂. ACS Applied Energy Materials, 2019, 2, 4640-4651.	5.1	177
8	Hydroxyl-Dependent Evolution of Oxygen Vacancies Enables the Regeneration of BiOCl Photocatalyst. ACS Applied Materials & Interfaces, 2017, 9, 16620-16626.	8.0	176
9	High-Entropy 2D Carbide MXenes: TiVNbMoC₃ and TiVCrMoC₃. ACS Nano, 2021, 15, 12815-12825.	14.6	162
10	Synthesis and Characterization of Ptâ€“Ag Alloy Nanocages with Enhanced Activity and Durability toward Oxygen Reduction. Nano Letters, 2016, 16, 6644-6649.	9.1	150
11	Li₂OHCl Crystalline Electrolyte for Stable Metallic Lithium Anodes. Journal of the American Chemical Society, 2016, 138, 1768-1771.	13.7	147
12	Fabrication of ultrathin solid electrolyte membranes of Î²-Li₃PS₄ nanoflakes by evaporation-induced self-assembly for all-solid-state batteries. Journal of Materials Chemistry A, 2016, 4, 8091-8096.	10.3	128
13	Interfaces in Heterogeneous Catalysts: Advancing Mechanistic Understanding through Atomic-Scale Measurements. Accounts of Chemical Research, 2017, 50, 787-795.	15.6	128
14	Ru Octahedral Nanocrystals with a Face-Centered Cubic Structure, {111} Facets, Thermal Stability up to 400 Â°C, and Enhanced Catalytic Activity. Journal of the American Chemical Society, 2019, 141, 7028-7036.	13.7	122
15	In-Plane Heterojunctions Enable Multiphasic Two-Dimensional (2D) MoS₂ Nanosheets As Efficient Photocatalysts for Hydrogen Evolution from Water Reduction. ACS Catalysis, 2016, 6, 6723-6729.	11.2	116
16	Quantitative Analysis of the Reduction Kinetics Responsible for the One-Pot Synthesis of Pdâ€“Pt Bimetallic Nanocrystals with Different Structures. Journal of the American Chemical Society, 2016, 138, 12263-12270.	13.7	111
17	Scalable neutral H2O2 electrosynthesis by platinum diphosphide nanocrystals by regulating oxygen reduction reaction pathways. Nature Communications, 2020, 11, 3928.	12.8	101
18	Introducing Ti³⁺defects based on lattice distortion for enhanced visible light photoreactivity in TiO₂microspheres. RSC Advances, 2017, 7, 32461-32467.	3.6	99

#	Article	IF	Citations
19	Lithium-film ceramics for solid-state lithionic devices. Nature Reviews Materials, 2021, 6, 313-331.	48.7	80
20	Effects of Surface Terminations of 2D Bi₂WO₆ on Photocatalytic Hydrogen Evolution from Water Splitting. ACS Applied Materials & Interfaces, 2020, 12, 20067-20074.	8.0	78
21	Synthesis of CaO₂ Nanocrystals and Their Spherical Aggregates with Uniform Sizes for Use as a Biodegradable Bacteriostatic Agent. Small, 2019, 15, e1902118.	10.0	77
22	Synthesis of Ru Icosahedral Nanocages with a Face-Centered-Cubic Structure and Evaluation of Their Catalytic Properties. ACS Catalysis, 2018, 8, 6948-6960.	11.2	66
23	Structural and electrolyte properties of Li4P2S6. Solid State Ionics, 2016, 284, 61-70.	2.7	59
24	Shape Effect Undermined by Surface Reconstruction: Ethanol Dehydrogenation over Shape-Controlled SrTiO₃ Nanocrystals. ACS Catalysis, 2018, 8, 555-565.	11.2	59
25	Enhanced visible light photocatalytic water reduction from a g-C3N4/SrTa2O6 heterojunction. Applied Catalysis B: Environmental, 2017, 217, 448-458.	20.2	58
26	Synthesis of Pt nanocrystals with different shapes using the same protocol to optimize their catalytic activity toward oxygen reduction. Materials Today, 2018, 21, 834-844.	14.2	58
27	Vacuum-Assisted Low-Temperature Synthesis of Reduced Graphene Oxide Thin-Film Electrodes for High-Performance Transparent and Flexible All-Solid-State Supercapacitors. ACS Applied Materials & Interfaces, 2018, 10, 11008-11017.	8.0	57
28	Facile Synthesis of Ru-Based Octahedral Nanocages with Ultrathin Walls in a Face-Centered Cubic Structure. Chemistry of Materials, 2017, 29, 9227-9237.	6.7	55
29	Surface Reorganization Leads to Enhanced Photocatalytic Activity in Defective BiOCl. Chemistry of Materials, 2018, 30, 5128-5136.	6.7	55
30	Modifying La_{0.6}Sr_{0.4}MnO₃ Perovskites with Cr Incorporation for Fast Isothermal CO₂â€Splitting Kinetics in Solarâ€Driven Thermochemical Cycles. Advanced Energy Materials, 2019, 9, 1803886.	19.5	55
31	Visible-light-driven Bi₂O₃/WO₃ composites with enhanced photocatalytic activity. RSC Advances, 2015, 5, 91094-91102.	3.6	54
32	Understanding the Thermal Stability of Palladiumâ€“Platinum Coreâ€“Shell Nanocrystals by <i>In Situ</i> Transmission Electron Microscopy and Density Functional Theory. ACS Nano, 2017, 11, 4571-4581.	14.6	53
33	Enabling Complete Ligand Exchange on the Surface of Gold Nanocrystals through the Deposition and Then Etching of Silver. Journal of the American Chemical Society, 2018, 140, 11898-11901.	13.7	53
34	Facile synthesis of Ag@Au coreâ€“sheath nanowires with greatly improved stability against oxidation. Chemical Communications, 2017, 53, 1965-1968.	4.1	50
35	Understanding the Impact of Surface Reconstruction of Perovskite Catalysts on CH₄ Activation and Combustion. ACS Catalysis, 2018, 8, 10306-10315.	11.2	50
36	Effect of Surface Structure of TiO₂ Nanoparticles on CO₂ Adsorption and SO₂ Resistance. ACS Sustainable Chemistry and Engineering, 2017, 5, 9295-9306.	6.7	49

#	Article	IF	Citations
37	Elucidating the mobility of H⁺and Li⁺ions in (Li_{6.25â^’x}H_xAl_{0.25})La₃Zr₂O₁₂<i>via</i>correlative neutron and electron spectroscopy. Energy and Environmental Science, 2019, 12, 945-951.	30.8	48
38	Visible light assisted photocatalytic hydrogen generation by Ta₂O₅/Bi₂O₃, TaON/Bi₂O₃, and Ta₃N₅/Bi₂O₃ composites. RSC Advances, 2015, 5, 54998-55005.	3.6	47
39	Fabrication of Subâ€Micrometerâ€Thick Solid Electrolyte Membranes of Î²â€Li₃PS₄ via Tiled Assembly of Nanoscale, Plateâ€Like Building Blocks. Advanced Energy Materials, 2018, 8, 1800014.	19.5	47
40	Ruthenium Nanoframes in the Face-Centered Cubic Phase: Facile Synthesis and Their Enhanced Catalytic Performance. ACS Nano, 2019, 13, 7241-7251.	14.6	47
41	Visible-light-active g-C₃N₄/N-doped Sr₂Nb₂O₇ heterojunctions as photocatalysts for the hydrogen evolution reaction. Sustainable Energy and Fuels, 2018, 2, 2507-2515.	4.9	46
42	Pdâ€Ru Alloy Nanocages with a Faceâ€Centered Cubic Structure and Their Enhanced Activity toward the Oxidation of Ethylene Glycol and Glycerol. Small Methods, 2020, 4, 1900843.	8.6	46
43	In situ TEM observation of the electrochemical lithiation of N-doped anatase TiO₂ nanotubes as anodes for lithium-ion batteries. Journal of Materials Chemistry A, 2017, 5, 20651-20657.	10.3	45
44	An Airâ€Stable Na₃SbS₄ Superionic Conductor Prepared by a Rapid and Economic Synthetic Procedure. Angewandte Chemie, 2016, 128, 8693-8697.	2.0	44
45	Reduction of charge-transfer resistance at the solid electrolyte â€" electrode interface by pulsed laser deposition of films from a crystalline Li2PO2N source. Journal of Power Sources, 2016, 312, 116-122.	7.8	43
46	Text mining for processing conditions of solid-state battery electrolytes. Electrochemistry Communications, 2020, 121, 106860.	4.7	43
47	Lithiumâ€Battery Anode Gains Additional Functionality for Neuromorphic Computing through Metalâ€"Insulator Phase Separation. Advanced Materials, 2020, 32, e1907465.	21.0	43
48	A Visibleâ€Lightâ€Active Heterojunction with Enhanced Photocatalytic Hydrogen Generation. ChemSusChem, 2016, 9, 1869-1879.	6.8	42
49	Direct in Situ Observation and Analysis of the Formation of Palladium Nanocrystals with High-Index Facets. Nano Letters, 2018, 18, 7004-7013.	9.1	42
50	The â€œfiller effectâ€: A study of solid oxide fillers with Î²-Li3PS4 for lithium conducting electrolytes. Solid State Ionics, 2015, 283, 75-80.	2.7	41
51	Facile One-Pot Synthesis of Pd@Pt_{1L} Octahedra with Enhanced Activity and Durability toward Oxygen Reduction. Chemistry of Materials, 2019, 31, 1370-1380.	6.7	41
52	La_{0.6}Sr_{0.4}Cr_{0.8}Co_{0.2}O₃Perovskite Decorated with Exsolved Co Nanoparticles for Stable CO₂Splitting and Syngas Production. ACS Applied Energy Materials, 2020, 3, 4569-4579.	5.1	41
53	Tire-derived carbon for catalytic preparation of biofuels from feedstocks containing free fatty acids. Carbon Resources Conversion, 2018, 1, 165-173.	5.9	38
54	Atomic defects in ultra-thin mesoporous TiO2 enhance photocatalytic hydrogen evolution from water splitting. Applied Surface Science, 2020, 513, 145723.	6.1	37

#	Article	IF	Citations
55	PdPt-TiO2 nanowires: correlating composition, electronic effects and O-vacancies with activities towards water splitting and oxygen reduction. Applied Catalysis B: Environmental, 2020, 277, 119177.	20.2	36
56	Elucidating Interfacial Stability between Lithium Metal Anode and Li Phosphorus Oxynitride via <i>In Situ</i> Electron Microscopy. Nano Letters, 2021, 21, 151-157.	9.1	36
57	Fundamental aspects of the structural and electrolyte properties of Li2OHCl from simulations and experiment. Physical Review Materials, 2017, 1, .	2.4	36
58	Fast Na diffusion and anharmonic phonon dynamics in superionic Na₃PS₄. Energy and Environmental Science, 2021, 14, 6554-6563.	30.8	36
59	Abnormally Low Activation Energy in Cubic Na₃SbS₄ Superionic Conductors. Chemistry of Materials, 2020, 32, 2264-2271.	6.7	35
60	Carbon polyaniline capacitive deionization electrodes with stable cycle life. Desalination, 2019, 464, 25-32.	8.2	32
61	Kinetics and Mechanism of Methanol Conversion over Anatase Titania Nanoshapes. ACS Catalysis, 2017, 7, 5345-5356.	11.2	31
62	Self-Assembled Framework Formed During Lithiation of SnS₂ Nanoplates Revealed by in Situ Electron Microscopy. Accounts of Chemical Research, 2017, 50, 1513-1520.	15.6	29
63	Photothermal transformation of Auâ€"Ag nanocages under pulsed laser irradiation. Nanoscale, 2019, 11, 3013-3020.	5.6	29
64	A Rationally Designed Route to the One-Pot Synthesis of Right Bipyramidal Nanocrystals of Copper. Chemistry of Materials, 2018, 30, 6469-6477.	6.7	28
65	Toward Controlling Filament Size and Location for Resistive Switches via Nanoparticle Exsolution at Oxide Interfaces. Small, 2020, 16, e2003224.	10.0	27
66	Kinetically Controlled Synthesis of Rhodium Nanocrystals with Different Shapes and a Comparison Study of Their Thermal and Catalytic Properties. Journal of the American Chemical Society, 2021, 143, 6293-6302.	13.7	26
67	Construction of 2D BiVO₄â^'CdSâ^'Ti₃C₂T_x Heterostructures for Enhanced Photoâ€redox Activities. ChemCatChem, 2020, 12, 3496-3503.	3.7	25
68	Enhancing the photoresponse and photocatalytic properties of TiO2 by controllably tuning defects across {101} facets. Applied Surface Science, 2018, 434, 711-716.	6.1	23
69	A facile, robust and scalable method for the synthesis of Pd nanoplates with hydroxylamine as a reducing agent and mechanistic insights from kinetic analysis. Journal of Materials Chemistry C, 2018, 6, 4677-4682.	5.5	22
70	Solvent-Mediated Synthesis of Amorphous Li₃PS₄/Polyethylene Oxide Composite Solid Electrolytes with High Li⁺ Conductivity. Chemistry of Materials, 2020, 32, 8789-8797.	6.7	21
71	Unraveling the electrolyte properties of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Na</mml:mi><mml:mn>3</mml:mn></mml through computation and experiment. Physical Review Materials, 2017, 1, .	2.4	21
72	Revealing the Structural Stability and Na-Ion Mobility of 3D Superionic Conductor Na₃SbS₄ at Extremely Low Temperatures. ACS Applied Energy Materials, 2018, 1, 7028-7034.	5.1	20

#	Article	IF	Citations
73	Oxygen Exchange in Dual-Phase La_{0.65}Sr_{0.35}MnO₃â€"CeO₂ Composites for Solar Thermochemical Fuel Production. ACS Applied Materials & Interfaces, 2020, 12, 32622-32632.	8.0	20
74	The interplay between surface facet and reconstruction on isopropanol conversion over SrTiO3 nanocrystals. Journal of Catalysis, 2020, 384, 49-60.	6.2	19
75	Atomistic insights into the nucleation and growth of platinum on palladium nanocrystals. Nature Communications, 2021, 12, 3215.	12.8	18
76	Novel Acid Catalysts from Wasteâ€Tireâ€Derived Carbon: Application in Wasteâ€"toâ€Biofuel Conversion. ChemistrySelect, 2017, 2, 4975-4982.	1.5	17
77	Conversion of Waste Tire Rubber into High-Value-Added Carbon Supports for Electrocatalysis. Journal of the Electrochemical Society, 2018, 165, H881-H888.	2.9	16
78	Reversibly tuning the surface state of Ag via the assistance of photocatalysis in Ag/BiOCl. Nanotechnology, 2019, 30, 305601.	2.6	16
79	Rhodium Decahedral Nanocrystals: Facile Synthesis, Mechanistic Insights, and Experimental Controls. ChemNanoMat, 2018, 4, 66-70.	2.8	15
80	Electrospun metal and metal alloy decorated TiO2 nanofiber photocatalysts for hydrogen generation. RSC Advances, 2018, 8, 32865-32876.	3.6	15
81	Mechanochemically Assisted Synthesis of Ruthenium Clusters Embedded in Mesoporous Carbon for an Efficient Hydrogen Evolution Reaction. ChemElectroChem, 2019, 6, 2719-2725.	3.4	15
82	A sinter-free future for solid-state battery designs. Energy and Environmental Science, 2022, 15, 2927-2936.	30.8	15
83	Mechanistic understanding and strategies to design interfaces of solid electrolytes: insights gained from transmission electron microscopy. Journal of Materials Science, 2019, 54, 10571-10594.	3.7	14
84	Essential effect of the electrolyte on the mechanical and chemical degradation of LiNi_{0.8}Co_{0.15}Al_{0.05}O₂ cathodes upon long-term cycling. Journal of Materials Chemistry A, 2021, 9, 2111-2119.	10.3	14
85	Optimizing the structural configuration of FePt-FeOx nanoparticles at the atomic scale by tuning the post-synthetic conditions. Nano Energy, 2019, 55, 441-446.	16.0	10
86	Facile Synthesis of Silver Icosahedral Nanocrystals with Uniform and Controllable Sizes. ChemNanoMat, 2018, 4, 1071-1077.	2.8	9
87	Insights into the extraction of photogenerated holes from CdSe/CdS nanorods for oxidative organic catalysis. Journal of Materials Chemistry A, 2021, 9, 12690-12699.	10.3	8
88	Unraveling the structural properties and dynamics of sulfonated solid acid carbon catalysts with neutron vibrational spectroscopy. Catalysis Today, 2020, 358, 387-393.	4.4	6
89	Biofuel Production With Sulfonated High Surface Area Carbons Derived From Glucose. ChemistrySelect, 2020, 5, 1534-1538.	1.5	5
90	Revealing the interplay between â€œintelligent behaviorâ€•and surface reconstruction of non-precious metal doped SrTiO3 catalysts during methane combustion. Catalysis Today, 2022, , .	4.4	5

#	Article	IF	Citations
91	Decomposition Kinetics of H₂O₂ on Pd Nanocrystals with Different Shapes and Surface Strains. ChemCatChem, 2022, 14, .	3.7	5
92	Computational study of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Li</mml:mi><mml:mn>3</mml:mn></mml:m and <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Li</mml:mi><mml:mn>3</mml:mn></mml:m li: Stability analysis of pure phases and of model interfaces with Li. Physical Review Materials, 2021, 5, .	2.4	4
93	Computational and experimental (re)investigation of the structural and electrolyte properties of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Li</mml:mi><mml:mn>4</mml:mn></mml mathvariant="normal">P</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mi mathvariant="normal">S</mml:mi><mml:mn>6</mml:mn></mml:msub></mml:mrow><mml:mo>,</mml:mo><mml:mo>Â</mml:mo> Physical Review Materials, 2020, 4, .	2.4	4
94	Nonconductive Polymers Enable Higher Ionic Conductivities and Suppress Reactivity in Hybrid Sulfideâ€“Polymer Solid State Electrolytes. ACS Applied Energy Materials, 2022, 5, 8900-8912.	5.1	4
95	Facile synthesis of Ptâ€“Ag octahedral and tetrahedral nanocrystals with enhanced activity and durability toward methanol oxidation. Journal of Materials Research, 2018, 33, 3891-3897.	2.6	3
96	Probing the Origin of Microcracks in Layered Oxide Cathodes via Electron Microscopy. Microscopy and Microanalysis, 2019, 25, 2058-2059.	0.4	3
97	Continuous Production of Waterâ€Soluble Nanocrystals through Antiâ€Solvent Precipitation in a Fluidic Device. ChemNanoMat, 2019, 5, 1131-1136.	2.8	3
98	Computational study of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Li</mml:mi><mml:mn>3</mml:mn></mml:m and <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Li</mml:mi><mml:mn>3</mml:mn></mml:m I: Electrolyte properties of pure and doped crystals. Physical Review Materials, 2021, 5, .	2.4	3
99	Li0.625Al0.125H0.25Cl0.75O0.25 Superionic Conductor with Disordered Rock-Salt Structure. ACS Applied Energy Materials, 2021, 4, 7674-7680.	5.1	2
100	Semiconductor Heterojunctions for Enhanced Visible Light Photocatalytic H2 Production. MRS Advances, 2018, 3, 3263-3270.	0.9	1
101	Career progression through professional engagement: The impact of MRS student-led activities. MRS Bulletin, 2020, 45, 306-307.	3.5	0