Lei Zhang

List of Publications by Year
in descending order

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Version: 2024-02-01

79 papers	10,610 citations	44069 48 h-index	64796 79 g-index
82 all docs	82 docs citations	82 times ranked	12446 citing authors

#	Article	IF	Citations
1	Recent progress made in the mechanism comprehension and design of electrocatalysts for alkaline water splitting. Energy and Environmental Science, 2019, 12, 2620-2645.	30.8	1,052
2	Nanostructured Pt-alloy electrocatalysts for PEM fuel cell oxygen reduction reaction. Chemical Society Reviews, 2010, 39, 2184.	38.1	1,037
3	Platinum-based nanocages with subnanometer-thick walls and well-defined, controllable facets. Science, 2015, 349, 412-416.	12.6	854
4	Nanostructured Materials for Heterogeneous Electrocatalytic CO₂ Reduction and their Related Reaction Mechanisms. Angewandte Chemie - International Edition, 2017, 56, 11326-11353.	13.8	811
5	Atomic Layer-by-Layer Deposition of Pt on Pd Nanocubes for Catalysts with Enhanced Activity and Durability toward Oxygen Reduction. Nano Letters, 2014, 14, 3570-3576.	9.1	448
6	Palladiumâ€“platinum core-shell icosahedra with substantially enhanced activity and durability towards oxygen reduction. Nature Communications, 2015, 6, 7594.	12.8	440
7	Pt-Based electrocatalysts with high atom utilization efficiency: from nanostructures to single atoms. Energy and Environmental Science, 2019, 12, 492-517.	30.8	400
8	Synergism of Geometric Construction and Electronic Regulation: 3D Seâ€(NiCo)S_x/(OH)_x Nanosheets for Highly Efficient Overall Water Splitting. Advanced Materials, 2018, 30, e1705538.	21.0	236
9	Cu²⁺-Assisted Synthesis of Hexoctahedral Auâ€“Pd Alloy Nanocrystals with High-Index Facets. Journal of the American Chemical Society, 2011, 133, 17114-17117.	13.7	229
10	Shape-controlled synthesis of Auâ€“Pd bimetallic nanocrystals for catalytic applications. Chemical Society Reviews, 2016, 45, 3916-3934.	38.1	228
11	Unique Excavated Rhombic Dodecahedral PtCu₃ Alloy Nanocrystals Constructed with Ultrathin Nanosheets of High-Energy {110} Facets. Journal of the American Chemical Society, 2014, 136, 3748-3751.	13.7	226
12	Non-noble Metal Electrocatalysts for the Hydrogen Evolution Reaction in Water Electrolysis. Electrochemical Energy Reviews, 2021, 4, 473-507.	25.5	224
13	Atomic Layer-by-Layer Deposition of Platinum on Palladium Octahedra for Enhanced Catalysts toward the Oxygen Reduction Reaction. ACS Nano, 2015, 9, 2635-2647.	14.6	209
14	Nano-designed semiconductors for electro- and photoelectro-catalytic conversion of carbon dioxide. Chemical Society Reviews, 2018, 47, 5423-5443.	38.1	181
15	Thin Heterojunctions and Spatially Separated Cocatalysts To Simultaneously Reduce Bulk and Surface Recombination in Photocatalysts. Angewandte Chemie - International Edition, 2016, 55, 13734-13738.	13.8	149
16	Ultrathin Pdâ€“Au Shells with Controllable Alloying Degree on Pd Nanocubes toward Carbon Dioxide Reduction. Journal of the American Chemical Society, 2019, 141, 4791-4794.	13.7	142
17	Pdâ€“Cu Bimetallic Tripods: A Mechanistic Understanding of the Synthesis and Their Enhanced Electrocatalytic Activity for Formic Acid Oxidation. Advanced Functional Materials, 2014, 24, 7520-7529.	14.9	134
18	Lowâ€Coordinated Edge Sites on Ultrathin Palladium Nanosheets Boost Carbon Dioxide Electroreduction Performance. Angewandte Chemie - International Edition, 2018, 57, 11544-11548.	13.8	127

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19	Hierarchical Flowerlike Gold Nanoparticles Labeled Immunochromatography Test Strip for Highly Sensitive Detection of Escherichia coli O157:H7. Langmuir, 2015, 31, 5537-5544.	3.5	118
20	Edge Sites with Unsaturated Coordination on Coreâ€“Shell Mn₃O₄@Mn_xCo_{3â^'}_xO₄ Nanostructures for Electrocatalytic Water Oxidation. Advanced Materials, 2017, 29, 1701820.	21.0	115
21	Engineering Pt/Pd Interfacial Electronic Structures for Highly Efficient Hydrogen Evolution and Alcohol Oxidation. ACS Applied Materials & Interfaces, 2017, 9, 18008-18014.	8.0	111
22	Atomic/molecular layer deposition for energy storage and conversion. Chemical Society Reviews, 2021, 50, 3889-3956.	38.1	109
23	Transformation of Pd Nanocubes into Octahedra with Controlled Sizes by Maneuvering the Rates of Etching and Regrowth. Journal of the American Chemical Society, 2013, 135, 11752-11755.	13.7	108
24	Hierarchically porous Cu/Zn bimetallic catalysts for highly selective CO2 electroreduction to liquid C2 products. Applied Catalysis B: Environmental, 2020, 269, 118800.	20.2	108
25	Pt/Pd Single-Atom Alloys as Highly Active Electrochemical Catalysts and the Origin of Enhanced Activity. ACS Catalysis, 2019, 9, 9350-9358.	11.2	106
26	Scaling up the Production of Colloidal Nanocrystals: Should We Increase or Decrease the Reaction Volume?. Advanced Materials, 2014, 26, 2600-2606.	21.0	104
27	Nanostrukturierte Materialien fÃ¼r die elektrokatalytische CO₂â€Reduktion und ihre Reaktionsmechanismen. Angewandte Chemie, 2017, 129, 11482-11511.	2.0	102
28	A review of core-shell nanostructured electrocatalysts for oxygen reduction reaction. Energy Storage Materials, 2018, 12, 260-276.	18.0	99
29	Synthesis of Concave Palladium Nanocubes with Highâ€Index Surfaces and High Electrocatalytic Activities. Chemistry - A European Journal, 2011, 17, 9915-9919.	3.3	98
30	Controlled synthesis of concave Cu₂O microcrystals enclosed by {hhl} high-index facets and enhanced catalytic activity. Journal of Materials Chemistry A, 2013, 1, 282-287.	10.3	98
31	Active and Stable Ptâ€“Ni Alloy Octahedra Catalyst for Oxygen Reduction via Near-Surface Atomical Engineering. ACS Catalysis, 2020, 10, 4205-4214.	11.2	98
32	⁶⁴Cu-Doped PdCu@Au Tripods: A Multifunctional Nanomaterial for Positron Emission Tomography and Image-Guided Photothermal Cancer Treatment. ACS Nano, 2016, 10, 3121-3131.	14.6	96
33	Polyol Syntheses of Palladium Decahedra and Icosahedra as Pure Samples by Maneuvering the Reaction Kinetics with Additives. ACS Nano, 2014, 8, 7041-7050.	14.6	95
34	Solid state precursor strategy for synthesizing hollow TiO2 boxes with a high percentage of reactive {001} facets exposed. Chemical Communications, 2011, 47, 6722.	4.1	93
35	Facile syntheses and enhanced electrocatalytic activities of Pt nanocrystals with {hkk} high-index surfaces. Nano Research, 2012, 5, 181-189.	10.4	92
36	Surfactantâ€Concentrationâ€Dependent Shape Evolution of Auâ€“Pd Alloy Nanocrystals from Rhombic Dodecahedron to Trisoctahedron and Hexoctahedron. Small, 2013, 9, 538-544.	10.0	88

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37	Formation of Enriched Vacancies for Enhanced CO₂ Electrocatalytic Reduction over AuCu Alloys. ACS Energy Letters, 2018, 3, 2144-2149.	17.4	88
38	Morphological and Compositional Design of Pdâ€“Cu Bimetallic Nanocatalysts with Controllable Product Selectivity toward CO₂ Electroreduction. Small, 2018, 14, 1703314.	10.0	84
39	One-Pot Synthesis of Penta-twinned Palladium Nanowires and Their Enhanced Electrocatalytic Properties. ACS Applied Materials & Interfaces, 2017, 9, 31203-31212.	8.0	70
40	Synthesis of ultrathin wrinkle-free PdCu alloy nanosheets for modulating d-band electrons for efficient methanol oxidation. Journal of Materials Chemistry A, 2018, 6, 8531-8536.	10.3	70
41	Facile syntheses and electrocatalytic properties of porous Pd and its alloy nanospheres. Journal of Materials Chemistry, 2011, 21, 9620.	6.7	62
42	Underpotential Depositionâ€Induced Synthesis of Compositionâ€Tunable Ptï¿¿Cu Nanocrystals and Their Catalytic Properties. Chemistry - A European Journal, 2013, 19, 3119-3124.	3.3	62
43	Rational design of porous structures via molecular layer deposition as an effective stabilizer for enhancing Pt ORR performance. Nano Energy, 2019, 60, 111-118.	16.0	62
44	Porous single-crystalline AuPt@Pt bimetallic nanocrystals with high mass electrocatalytic activities. Chemical Science, 2016, 7, 3500-3505.	7.4	59
45	Tuning Oxygen Vacancies of Oxides to Promote Electrocatalytic Reduction of Carbon Dioxide. ACS Energy Letters, 2020, 5, 552-558.	17.4	54
46	Toward a Quantitative Understanding of Symmetry Reduction Involved in the Seed-Mediated Growth of Pd Nanocrystals. Journal of the American Chemical Society, 2015, 137, 6643-6652.	13.7	53
47	Recent Development of Electrocatalytic CO₂ Reduction Application to Energy Conversion. Small, 2021, 17, e2100323.	10.0	53
48	Synthesis and high electrocatalytic performance of hexagram shaped gold particles having an open surface structure with kinks. Nano Research, 2011, 4, 612-622.	10.4	50
49	Synthesis of Platinum Nanotubes and Nanorings via Simultaneous Metal Alloying and Etching. Journal of the American Chemical Society, 2016, 138, 6332-6335.	13.7	49
50	Fabrication of bilayer Pd-Pt nanocages with sub-nanometer thin shells for enhanced hydrogen evolution reaction. Nano Research, 2019, 12, 2268-2274.	10.4	47
51	Abundant Ce³⁺ Ions in Auâ€CeO_x Nanosheets to Enhance CO₂ Electroreduction Performance. Small, 2019, 15, e1900289.	10.0	46
52	Single atom surface engineering: A new strategy to boost electrochemical activities of Pt catalysts. Nano Energy, 2022, 93, 106813.	16.0	41
53	Self-assembly of noble metal nanoparticles into sub-100 nm colloidosomes with collective optical and catalytic properties. Chemical Science, 2017, 8, 6103-6110.	7.4	40
54	Facet-evolution growth of Mn3O4@CoxMn3-xO4 electrocatalysts on Ni foam towards efficient oxygen evolution reaction. Journal of Catalysis, 2019, 369, 105-110.	6.2	40

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55	Lowâ€Coordinated Edge Sites on Ultrathin Palladium Nanosheets Boost Carbon Dioxide Electroreduction Performance. Angewandte Chemie, 2018, 130, 11718-11722.	2.0	39
56	A Ligandâ€Exchange Route to Nobel Metal Nanocrystals with a Clean Surface for Enhanced Optical and Catalytic Properties. Particle and Particle Systems Characterization, 2017, 34, 1700075.	2.3	38
57	Synthesis of spatially uniform metal alloys nanocrystals via a diffusion controlled growth strategy: The case of Au-Pd alloy trisoctahedral nanocrystals with tunable composition. Nano Research, 2012, 5, 618-629.	10.4	36
58	Achieving convenient CO₂ electroreduction and photovoltage in tandem using potential-insensitive disordered Ag nanoparticles. Chemical Science, 2018, 9, 6599-6604.	7.4	34
59	Trimetallic Ptâ€“Pdâ€“Ni octahedral nanocages with subnanometer thick-wall towards high oxygen reduction reaction. Nano Energy, 2019, 64, 103890.	16.0	34
60	Facet design promotes electroreduction of carbon dioxide to carbon monoxide on palladium nanocrystals. Chemical Engineering Science, 2019, 194, 29-35.	3.8	34
61	Structural evolution of concave trimetallic nanocubes with tunable ultra-thin shells for oxygen reduction reaction. Nanoscale, 2016, 8, 16640-16649.	5.6	32
62	Formation of Second-Generation Nanoclusters on Metal Nanoparticles Driven by Reactant Gases. Nano Letters, 2016, 16, 5001-5009.	9.1	32
63	Synthesis of size-controlled monodisperse Pd nanoparticles via a non-aqueous seed-mediated growth. Nanoscale Research Letters, 2012, 7, 312.	5.7	30
64	Fiveâ€Fold Twinned Pd Nanorods and Their Use as Templates for the Synthesis of Bimetallic or Hollow Nanostructures. ChemNanoMat, 2015, 1, 246-252.	2.8	30
65	Cu@Pt catalysts prepared by galvanic replacement of polyhedral copper nanoparticles for polymer electrolyte membrane fuel cells. Electrochimica Acta, 2019, 306, 167-174.	5.2	30
66	Controlling the Growth of Au on Icosahedral Seeds of Pd by Manipulating the Reduction Kinetics. Journal of Physical Chemistry C, 2016, 120, 20768-20774.	3.1	26
67	Highly stable one-dimensional Pt nanowires with modulated structural disorder towards the oxygen reduction reaction. Journal of Materials Chemistry A, 2019, 7, 24830-24836.	10.3	26
68	Designing a reductive hybrid membrane to selectively capture noble metallic ions during oil/water emulsion separation with further function enhancement. Journal of Materials Chemistry A, 2018, 6, 10217-10225.	10.3	25
69	Three-Dimensional Cathodes for Electrochemical Reduction of CO2: From Macro- to Nano-Engineering. Nanomaterials, 2020, 10, 1884.	4.1	23
70	Do polymer ligands block the catalysis of metal nanoparticles? Unexpected importance of binding motifs in improving catalytic activity. Journal of Materials Chemistry A, 2020, 8, 15900-15908.	10.3	22
71	Gold nanoshurikens with uniform sharp tips for chemical sensing by the localized surface plasmon resonance. Nanoscale, 2017, 9, 17037-17043.	5.6	21
72	Cu²⁺ underpotential-deposition assisted synthesis of Au and Auâ€“Pd alloy nanocrystals with systematic shape evolution. CrystEngComm, 2015, 17, 5556-5561.	2.6	16

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73	A Facile and Environmentally Friendly One-Pot Synthesis of Pt Surface-Enriched Pt-Pd(x)/C Catalyst for Oxygen Reduction. Electrocatalysis, 2018, 9, 495-504.	3.0	16
74	Facile synthesis of Pd@Pt octahedra supported on carbon for electrocatalytic applications. AICHE Journal, 2017, 63, 2528-2534.	3.6	15
75	Nucleation-mediated synthesis and enhanced catalytic properties of Auâ€“Pd bimetallic tripods and bipyramids with twinned structures and high-energy facets. Nanoscale, 2016, 8, 2819-2825.	5.6	14
76	Robust synthesis of ultrathin Auâ€“Ag nanowires as a high-surface-area, synergistic substrate for constructing efficient Pt-based catalysts. Journal of Materials Chemistry A, 2018, 6, 22161-22169.	10.3	14
77	Concentrating and activating carbon dioxide over AuCu aerogel grain boundaries. Journal of Chemical Physics, 2020, 152, 204703.	3.0	13
78	Self-assembly of 2,6-naphthalenedicarboxylic acid and 4,4â€²-biphenyldicarboxylic acid on highly oriented pyrolytic graphite and Au(111) surfaces. Electrochimica Acta, 2010, 55, 8287-8292.	5.2	6
79	Low cytotoxicity porous Nd₂(SiO₄)₃nanoparticles with near infrared excitation and emission. Nanotechnology, 2011, 22, 185703.	2.6	1