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List of Publications by Citations

76 papers	13,710 citations	43 h-index	82 g-index
82 ext. papers	15,478 ext. citations	13.3 avg, IF	7.25 L-index

#	Paper	IF	Citations
76	Plasmonic-metal nanostructures for efficient conversion of solar to chemical energy. *Nature Materials*, **2011**, 10, 911-21	27	3569
75	Visible-light-enhanced catalytic oxidation reactions on plasmonic silver nanostructures. *Nature Chemistry*, **2011**, 3, 467-72	17.6	1390
74	Photochemical transformations on plasmonic metal nanoparticles. *Nature Materials*, **2015**, 14, 567-76	27	1023
73	Water splitting on composite plasmonic-metal/semiconductor photoelectrodes: evidence for selective plasmon-induced formation of charge carriers near the semiconductor surface. *Journal of the American Chemical Society*, **2011**, 133, 5202-5	16.4	700
72	Singular characteristics and unique chemical bond activation mechanisms of photocatalytic reactions on plasmonic nanostructures. *Nature Materials*, **2012**, 11, 1044-50	27	590
71	Tuning selectivity in propylene epoxidation by plasmon mediated photo-switching of Cu oxidation state. *Science*, **2013**, 339, 1590-3	33.3	448
70	Catalytic conversion of solar to chemical energy on plasmonic metal nanostructures. *Nature Catalysis*, **2018**, 1, 656-665	36.5	362
69	High-performance Ag-Co alloy catalysts for electrochemical oxygen reduction. *Nature Chemistry*, **2014**, 6, 828-34	17.6	331
68	Evidence and implications of direct charge excitation as the dominant mechanism in plasmon-mediated photocatalysis. *Nature Communications*, **2016**, 7, 10545	17.4	291
67	Enhancing Photochemical Activity of Semiconductor Nanoparticles with Optically Active Ag Nanostructures: Photochemistry Mediated by Ag Surface Plasmons. *Journal of Physical Chemistry C*, **2010**, 114, 9173-9177	3.8	279
66	Controlling energy flow in multimetallic nanostructures for plasmonic catalysis. *Nature Nanotechnology*, **2017**, 12, 1000-1005	28.7	271
65	Mechanism of Charge Transfer from Plasmonic Nanostructures to Chemically Attached Materials. *ACS Nano*, **2016**, 10, 6108-15	16.7	242
64	Predictive Model for the Design of Plasmonic Metal/Semiconductor Composite Photocatalysts. *ACS Catalysis*, **2011**, 1, 1441-1447	13.1	241
63	Engineering selectivity in heterogeneous catalysis: Ag nanowires as selective ethylene epoxidation catalysts. *Journal of the American Chemical Society*, **2008**, 130, 11264-5	16.4	240
62	Catalytic and photocatalytic transformations on metal nanoparticles with targeted geometric and plasmonic properties. *Accounts of Chemical Research*, **2013**, 46, 1890-9	24.3	213
61	Elementary Mechanisms in Electrocatalysis: Revisiting the ORR Tafel Slope. *Journal of the Electrochemical Society*, **2012**, 159, H864-H870	3.9	207
60	Control of ethylene epoxidation selectivity by surface oxametallacycles. *Journal of the American Chemical Society*, **2003**, 125, 4034-5	16.4	178

59	Formation of a stable surface oxametallacycle that produces ethylene oxide. *Journal of the American Chemical Society*, **2002**, 124, 310-7	16.4	178
58	Selectivity driven design of bimetallic ethylene epoxidation catalysts from first principles. *Journal of Catalysis*, **2004**, 224, 489-493	7.3	167
57	Communications: Exceptions to the d-band model of chemisorption on metal surfaces: The dominant role of repulsion between adsorbate states and metal d-states. *Journal of Chemical Physics*, **2010**, 132, 221101	3.9	161
56	Controlling carbon surface chemistry by alloying: carbon tolerant reforming catalyst. *Journal of the American Chemical Society*, **2006**, 128, 11354-5	16.4	152
55	Shape- and Size-Specific Chemistry of Ag Nanostructures in Catalytic Ethylene Epoxidation. *ChemCatChem*, **2010**, 2, 78-83	5.2	147
54	Construction of a reaction coordinate and a microkinetic model for ethylene epoxidation on silver from DFT calculations and surface science experiments. *Journal of Catalysis*, **2003**, 214, 200-212	7.3	146
53	Hydrothermal catalytic production of fuels and chemicals from aquatic biomass. *Journal of Chemical Technology and Biotechnology*, **2013**, 88, 13-24	3.5	139
52	A Viewpoint on Direct Methane Conversion to Ethane and Ethylene Using Oxidative Coupling on Solid Catalysts. *ACS Catalysis*, **2016**, 6, 4340-4346	13.1	138
51	Comparative study of the kinetics of methane steam reforming on supported Ni and Sn/Ni alloy catalysts: The impact of the formation of Ni alloy on chemistry. *Journal of Catalysis*, **2009**, 263, 220-227	7.3	132
50	Predictive Structure Reactivity Models for Rapid Screening of Pt-Based Multimetallic Electrocatalysts for the Oxygen Reduction Reaction. *ACS Catalysis*, **2012**, 2, 12-16	13.1	102
49	Measuring and relating the electronic structures of nonmodel supported catalytic materials to their performance. *Journal of the American Chemical Society*, **2009**, 131, 2747-54	16.4	89
48	On the mechanism of Cs promotion in ethylene epoxidation on Ag. *Journal of the American Chemical Society*, **2004**, 126, 8086-7	16.4	83
47	Design Principles for Directing Energy and Energetic Charge Flow in Multicomponent Plasmonic Nanostructures. *ACS Energy Letters*, **2018**, 3, 1590-1596	20.1	76
46	Chemical Requirement for Extracting Energetic Charge Carriers from Plasmonic Metal Nanoparticles to Perform Electron-Transfer Reactions. *Journal of the American Chemical Society*, **2019**, 141, 643-647	16.4	74
45	Ethylene epoxidation on Ag: identification of the crucial surface intermediate by experimental and theoretical investigation of its electronic structure. *Angewandte Chemie - International Edition*, **2004**, 43, 2918-21	16.4	70
44	Electronic Structure Engineering in Heterogeneous Catalysis: Identifying Novel Alloy Catalysts Based on Rapid Screening for Materials with Desired Electronic Properties. *Topics in Catalysis*, **2012**, 55, 376-390	2.3	69
43	Recent Developments in Nitrogen Reduction Catalysts: A Virtual Issue. *ACS Energy Letters*, **2019**, 4, 163-166	20.1	68
42	Flow and extraction of energy and charge carriers in hybrid plasmonic nanostructures. *Nature Materials*, **2021**, 20, 916-924	27	66

41	Direct Electrochemical Oxidation of Hydrocarbon Fuels on SOFCs: Improved Carbon Tolerance of Ni Alloy Anodes. *Journal of the Electrochemical Society*, **2009**, 156, B1312	3.9	57
40	Strong Chemical Interactions Between Au and Off-Stoichiometric Defects on TiO2 as a Possible Source of Chemical Activity of Nanosized Au Supported on the Oxide. *Journal of Physical Chemistry C*, **2009**, 113, 6689-6693	3.8	53
39	Establishing Relationships Between the Geometric Structure and Chemical Reactivity of Alloy Catalysts Based on Their Measured Electronic Structure. *Topics in Catalysis*, **2010**, 53, 348-356	2.3	53
38	Identifying optimal active sites for heterogeneous catalysis by metal alloys based on molecular descriptors and electronic structure engineering. *Current Opinion in Chemical Engineering*, **2013**, 2, 312-319	5.4	49
37	Multicomponent Catalysts: Limitations and Prospects. *ACS Catalysis*, **2018**, 8, 3202-3208	13.1	45
36	Synthesis of Oxametallacycles from 2-Iodoethanol on Ag(111) and the Structure Dependence of Their Reactivity. *Langmuir*, **2002**, 18, 5197-5204	4	45
35	Electrochemical Oxygen Reduction Reaction on Ag Nanoparticles of Different Shapes. *ChemCatChem*, **2016**, 8, 256-261	5.2	45
34	First-Principles Investigations of Electrochemical Oxidation of Hydrogen at Solid Oxide Fuel Cell Operating Conditions. *Journal of the Electrochemical Society*, **2007**, 154, B919	3.9	40
33	Direct electrochemical oxidation of ethanol on SOFCs: Improved carbon tolerance of Ni anode by alloying. *Applied Catalysis B: Environmental*, **2016**, 183, 386-393	21.8	39
32	First-Principles Analysis of the Activity of Transition and Noble Metals in the Direct Utilization of Hydrocarbon Fuels at Solid Oxide Fuel Cell Operating Conditions. *Journal of the Electrochemical Society*, **2009**, 156, B1457	3.9	39
31	Pitfalls and best practices in measurements of the electrochemical surface area of platinum-based nanostructured electro-catalysts. *Journal of Catalysis*, **2017**, 345, 1-10	7.3	38
30	Stable and selective catalysts for propane dehydrogenation operating at thermodynamic limit. *Science*, **2021**, 373, 217-222	33.3	38
29	Nanoscale Engineering of Efficient Oxygen Reduction Electrocatalysts by Tailoring the Local Chemical Environment of Pt Surface Sites. *ACS Catalysis*, **2017**, 7, 17-24	13.1	37
28	Overcoming Limitation in the Design of Selective Solid Catalysts by Manipulating Shape and Size of Catalytic Particles: Epoxidation Reactions on Silver. *ChemCatChem*, **2010**, 2, 1061-1063	5.2	29
27	Oxidative coupling of methane over mixed oxide catalysts designed for solid oxide membrane reactors. *Catalysis Science and Technology*, **2016**, 6, 4370-4376	5.5	27
26	Theory-Guided Machine Learning Finds Geometric Structure-Property Relationships for Chemisorption on Subsurface Alloys. *CheM*, **2020**, 6, 3100-3117	16.2	27
25	In search of membrane-catalyst materials for oxidative coupling of methane: Performance and phase stability studies of gadolinium-doped barium cerate and the impact of Zr doping. *Applied Catalysis B: Environmental*, **2018**, 230, 29-35	21.8	25
24	Kinetic Trapping of Immiscible Metal Atoms into Bimetallic Nanoparticles through Plasmonic Visible Light-Mediated Reduction of a Bimetallic Oxide Precursor: Case Study of Ag□t Nanoparticle Synthesis. *Chemistry of Materials*, **2016**, 28, 8289-8295	9.6	23

23	Maximizing Solar Water Splitting Performance by Nanoscopic Control of the Charge Carrier Fluxes across Semiconductor–Electrocatalyst Junctions. *ACS Catalysis*, **2018**, 8, 8545-8552	13.1	23
22	Deactivation of Pt Catalysts during Hydrothermal Decarboxylation of Butyric Acid. *ACS Sustainable Chemistry and Engineering*, **2014**, 2, 2399-2406	8.3	23
21	Addressing Challenges and Scalability in the Synthesis of Thin Uniform Metal Shells on Large Metal Nanoparticle Cores: Case Study of Ag-Pt Core-Shell Nanocubes. *ACS Applied Materials & Interfaces*, **2017**, 9, 43127-43132	9.5	23
20	Engineering the Optical and Catalytic Properties of Co-Catalyst/Semiconductor Photocatalysts. *ACS Photonics*, **2017**, 4, 979-985	6.3	21
19	Unearthing the factors governing site specific rates of electronic excitations in multicomponent plasmonic systems and catalysts. *Faraday Discussions*, **2019**, 214, 441-453	3.6	20
18	Design of Plasmonic Platforms for Selective Molecular Sensing Based on Surface-Enhanced Raman Spectroscopy. *Journal of Physical Chemistry C*, **2012**, 116, 9824-9829	3.8	19
17	Design Principles for Efficient and Stable Water Splitting Photoelectrocatalysts. *Accounts of Chemical Research*, **2021**, 54, 1992-2002	24.3	18
16	Quantifying Losses and Assessing the Photovoltage Limits in Metal–Insulator–Semiconductor Water Splitting Systems. *Advanced Energy Materials*, **2020**, 10, 1903354	21.8	15
15	Plasma-driven solution electrolysis. *Journal of Applied Physics*, **2021**, 129, 200902	2.5	13
14	Guidelines for Optimizing the Performance of Metal–Insulator–Semiconductor (MIS) Photoelectrocatalytic Systems by Tuning the Insulator Thickness. *ACS Energy Letters*, **2019**, 4, 2632-2638	20.1	12
13	Communications: Developing relationships between the local chemical reactivity of alloy catalysts and physical characteristics of constituent metal elements. *Journal of Chemical Physics*, **2010**, 132, 111101	3.9	11
12	Ethylene Epoxidation on Ag: Identification of the Crucial Surface Intermediate by Experimental and Theoretical Investigation of its Electronic Structure. *Angewandte Chemie*, **2004**, 116, 2978-2981	3.6	11
11	Oxidative Coupling of Methane over Hybrid Membrane/Catalyst Active Centers: Chemical Requirements for Prolonged Lifetime. *ACS Energy Letters*, **2019**, 4, 1465-1470	20.1	10
10	Analyzing relationships between surface perturbations and local chemical reactivity of metal sites: Alkali promotion of O2 dissociation on Ag(111). *Journal of Chemical Physics*, **2016**, 144, 234704	3.9	10
9	Interpretable machine learning for knowledge generation in heterogeneous catalysis. *Nature Catalysis*, **2022**, 5, 175-184	36.5	10
8	Critical Practices in Rigorously Assessing the Inherent Activity of Nanoparticle Electrocatalysts. *ACS Catalysis*, **2020**, 10, 10735-10741	13.1	9
7	In-operando surface-sensitive probing of electrochemical reactions on nanoparticle electrocatalysts: Spectroscopic characterization of reaction intermediates and elementary steps of oxygen reduction reaction on Pt. *Journal of Catalysis*, **2021**, 396, 32-39	7.3	7
6	Heterogeneous Catalysis of Alkene Epoxidation **2008**, 3448		5

5	Modeling the Impact of Metallic Plasmonic Resonators on the Solar Conversion Efficiencies of Semiconductor Photoelectrodes: When Does Introducing Buried Plasmonic Nanostructures Make Sense?. *Journal of Physical Chemistry C*, **2018**, 122, 24279-24286	3.8	4
4	Microkinetic modeling in electrocatalysis: Applications, limitations, and recommendations for reliable mechanistic insights. *Journal of Catalysis*, **2021**, 404, 864-864	7.3	4
3	Uncovering electronic and geometric descriptors of chemical activity for metal alloys and oxides using unsupervised machine learning. *Chem Catalysis*, **2021**, 1, 923-940		4
2	Characterizing the Geometry and Quantifying the Impact of Nanoscopic Electrocatalyst/Semiconductor Interfaces under Solar Water Splitting Conditions. *Advanced Energy Materials*,2103798	21.8	0
1	Optimizing Molecular Light Absorption in the Strong Coupling Regime for Solar Energy Harvesting. *Nano Energy*, **2022**, 107244	17.1	0