Phillip Christopher

List of Publications by Year
in descending order

92 papers	16,452 citations	53794 45 h-index	49909 87 g-index
94 all docs	94 docs citations	94 times ranked	16700 citing authors

#	Article	IF	Citations
1	Plasmonic-metal nanostructures for efficient conversion of solar to chemical energy. Nature Materials, 2011, 10, 911-921.	27.5	4,163
2	Visible-light-enhanced catalytic oxidation reactions on plasmonic silver nanostructures. Nature Chemistry, 2011, 3, 467-472.	13.6	1,662
3	Direct Photocatalysis by Plasmonic Nanostructures. ACS Catalysis, 2014, 4, 116-128.	11.2	773
4	Quantifying hot carrier and thermal contributions in plasmonic photocatalysis. Science, 2018, 362, 69-72.	12.6	756
5	Singular characteristics and unique chemical bond activation mechanisms of photocatalytic reactions on plasmonic nanostructures. Nature Materials, 2012, 11, 1044-1050.	27.5	720
6	Adsorbate-mediated strong metalâ€“support interactions in oxide-supported Rh catalysts. Nature Chemistry, 2017, 9, 120-127.	13.6	609
7	Isolated Metal Active Site Concentration and Stability Control Catalytic CO₂ Reduction Selectivity. Journal of the American Chemical Society, 2015, 137, 3076-3084.	13.7	544
8	Catalyst Architecture for Stable Single Atom Dispersion Enables Site-Specific Spectroscopic and Reactivity Measurements of CO Adsorbed to Pt Atoms, Oxidized Pt Clusters, and Metallic Pt Clusters on TiO₂. Journal of the American Chemical Society, 2017, 139, 14150-14165.	13.7	525
9	Light-driven methane dry reforming with single atomic site antenna-reactor plasmonic photocatalysts. Nature Energy, 2020, 5, 61-70.	39.5	466
10	Structural evolution of atomically dispersed Pt catalysts dictates reactivity. Nature Materials, 2019, 18, 746-751.	27.5	404
11	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.	3.1	307
12	Engineering Selectivity in Heterogeneous Catalysis: Ag Nanowires as Selective Ethylene Epoxidation Catalysts. Journal of the American Chemical Society, 2008, 130, 11264-11265.	13.7	288
13	Predictive Model for the Design of Plasmonic Metal/Semiconductor Composite Photocatalysts. ACS Catalysis, 2011, 1, 1441-1447.	11.2	279
14	Utilizing Quantitative <i>in Situ</i> FTIR Spectroscopy To Identify Well-Coordinated Pt Atoms as the Active Site for CO Oxidation on Al₂O₃-Supported Pt Catalysts. ACS Catalysis, 2016, 6, 5599-5609.	11.2	246
15	Catalytic and Photocatalytic Transformations on Metal Nanoparticles with Targeted Geometric and Plasmonic Properties. Accounts of Chemical Research, 2013, 46, 1890-1899.	15.6	245
16	Approaches for Understanding and Controlling Interfacial Effects in Oxide-Supported Metal Catalysts. ACS Catalysis, 2018, 8, 7368-7387.	11.2	224
17	Hot Charge Carrier Transmission from Plasmonic Nanostructures. Annual Review of Physical Chemistry, 2017, 68, 379-398.	10.8	218
18	Controlling Catalytic Selectivity on Metal Nanoparticles by Direct Photoexcitation of Adsorbateâ€“Metal Bonds. Nano Letters, 2014, 14, 5405-5412.	9.1	217

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19	Balancing Near-Field Enhancement, Absorption, and Scattering for Effective Antennaâ€“Reactor Plasmonic Photocatalysis. Nano Letters, 2017, 17, 3710-3717.	9.1	202
20	Rh single atoms on TiO2 dynamically respond to reaction conditions by adapting their site. Nature Communications, 2019, 10, 4488.	12.8	191
21	Nature of stable single atom Pt catalysts dispersed on anatase TiO2. Journal of Catalysis, 2018, 367, 104-114.	6.2	189
22	Shapeâ€•and Sizeâ€Specific Chemistry of Ag Nanostructures in Catalytic Ethylene Epoxidation. ChemCatChem, 2010, 2, 78-83.	3.7	186
23	Quantitative and Atomic-Scale View of CO-Induced Pt Nanoparticle Surface Reconstruction at Saturation Coverage via DFT Calculations Coupled with <i>in Situ</i> TEM and IR. Journal of the American Chemical Society, 2017, 139, 4551-4558.	13.7	186
24	First-principles design of a single-atomâ€“alloy propane dehydrogenation catalyst. Science, 2021, 372, 1444-1447.	12.6	185
25	Uniformity Is Key in Defining Structureâ€“Function Relationships for Atomically Dispersed Metal Catalysts: The Case of Pt/CeO₂. Journal of the American Chemical Society, 2020, 142, 169-184.	13.7	170
26	Support Induced Control of Surface Composition in Cuâ€“Ni/TiO₂ Catalysts Enables High Yield Co-Conversion of HMF and Furfural to Methylated Furans. ACS Catalysis, 2017, 7, 4070-4082.	11.2	152
27	Plasmon-Mediated Catalytic O₂ Dissociation on Ag Nanostructures: Hot Electrons or Near Fields?. ACS Energy Letters, 2019, 4, 1803-1809.	17.4	136
28	Response to Comment on â€œQuantifying hot carrier and thermal contributions in plasmonic photocatalysisâ€. Science, 2019, 364, .	12.6	131
29	Recent Developments in Nitrogen Reduction Catalysts: A Virtual Issue. ACS Energy Letters, 2019, 4, 163-166.	17.4	115
30	Mechanism of CO2 reduction by H2 on Ru(0 0 0 1) and general selectivity descriptors for late-transition metal catalysts. Journal of Catalysis, 2016, 343, 86-96.	6.2	104
31	Using probe molecule FTIR spectroscopy to identify and characterize Pt-group metal based single atom catalysts. Chinese Journal of Catalysis, 2017, 38, 1473-1480.	14.0	86
32	Synthesis of Heteroatom Rhâ€“ReO_{<i>x</i>} Atomically Dispersed Species on Al₂O₃ and Their Tunable Catalytic Reactivity in Ethylene Hydroformylation. ACS Catalysis, 2019, 9, 10899-10912.	11.2	81
33	Plasmon-driven carbonâ€“fluorine (C(sp3)â€“F) bond activation with mechanistic insights into hot-carrier-mediated pathways. Nature Catalysis, 2020, 3, 564-573.	34.4	81
34	Effects of Cuâ€“Ni Bimetallic Catalyst Composition and Support on Activity, Selectivity, and Stability for Furfural Conversion to 2-Methyfuran. ACS Sustainable Chemistry and Engineering, 2018, 6, 2152-2161.	6.7	80
35	Plasmons at the interface. Science, 2015, 349, 587-588.	12.6	79
36	Unifying Mechanistic Analysis of Factors Controlling Selectivity in Fructose Dehydration to 5-Hydroxymethylfurfural by Homogeneous Acid Catalysts in Aprotic Solvents. ACS Catalysis, 2018, 8, 5591-5600.	11.2	73

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37	Influence of Metal Oxide Support Acid Sites on Cu-Catalyzed Nonoxidative Dehydrogenation of Ethanol to Acetaldehyde. ACS Catalysis, 2019, 9, 3537-3550.	11.2	72
38	Relationship between Atomic Scale Structure and Reactivity of Pt Catalysts: Hydrodeoxygenation of <i>m</i>-Cresol over Isolated Pt Cations and Clusters. ACS Catalysis, 2020, 10, 595-603.	11.2	68
39	Integration of heterogeneous and biochemical catalysis for production of fuels and chemicals from biomass. Current Opinion in Biotechnology, 2017, 45, 127-135.	6.6	58
40	The Catalytic Mechanics of Dynamic Surfaces: Stimulating Methods for Promoting Catalytic Resonance. ACS Catalysis, 2020, 10, 12666-12695.	11.2	54
41	Adsorbate Specificity in Hot Electron Driven Photochemistry on Catalytic Metal Surfaces. Journal of Physical Chemistry C, 2014, 118, 28017-28031.	3.1	53
42	Impact of chemical interface damping on surface plasmon dephasing. Faraday Discussions, 2019, 214, 59-72.	3.2	53
43	Selective Methanol Carbonylation to Acetic Acid on Heterogeneous Atomically Dispersed ReO₄/SiO₂ Catalysts. Journal of the American Chemical Society, 2020, 142, 14178-14189.	13.7	51
44	Photon Energy Threshold in Direct Photocatalysis with Metal Nanoparticles: Key Evidence from the Action Spectrum of the Reaction. Journal of Physical Chemistry Letters, 2017, 8, 2526-2534.	4.6	50
45	Directly Probing the Local Coordination, Charge State, and Stability of Single Atom Catalysts by Advanced Electron Microscopy: A Review. Small, 2021, 17, e2006482.	10.0	49
46	Nitrate Removal via a Formate Radical-Induced Photochemical Process. Environmental Science & Technology, 2019, 53, 316-324.	10.0	43
47	Atomically Dispersed Rh Active Sites on Oxide Supports with Controlled Acidity for Gas-Phase Halide-Free Methanol Carbonylation to Acetic Acid. Industrial & Engineering Chemistry Research, 2019, 58, 12632-12641.	3.7	42
48	Combining <i>In-Situ</i> Transmission Electron Microscopy and Infrared Spectroscopy for Understanding Dynamic and Atomic-Scale Features of Supported Metal Catalysts. Journal of Physical Chemistry C, 2018, 122, 25143-25157.	3.1	41
49	Dynamic Control of Elementary Step Energetics via Pulsed Illumination Enhances Photocatalysis on Metal Nanoparticles. ACS Energy Letters, 2020, 5, 3518-3525.	17.4	41
50	Low-Temperature Ammonia Production during NO Reduction by CO Is Due to Atomically Dispersed Rhodium Active Sites. ACS Catalysis, 2020, 10, 5217-5222.	11.2	40
51	Single-Atom Catalysts: Are All Sites Created Equal?. ACS Energy Letters, 2019, 4, 2249-2250.	17.4	36
52	Catalytic resonance theory: parallel reaction pathway control. Chemical Science, 2020, 11, 3501-3510.	7.4	35
53	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.	3.7	34
54	Theory of hot electrons: general discussion. Faraday Discussions, 2019, 214, 245-281.	3.2	34

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55	Reductant composition influences the coordination of atomically dispersed Rh on anatase TiO₂. Catalysis Science and Technology, 2020, 10, 1597-1601.	4.1	34
56	Hybrid Catalytic Biorefining of Hardwood Biomass to Methylated Furans and Depolymerized Technical Lignin. ACS Sustainable Chemistry and Engineering, 2018, 6, 10587-10594.	6.7	33
57	Photochemistry of Plasmonic Titanium Nitride Nanocrystals. Journal of Physical Chemistry C, 2019, 123, 21796-21804.	3.1	33
58	Non-plasmonic metal nanoparticles as visible light photocatalysts for the selective oxidation of aliphatic alcohols with molecular oxygen at near ambient conditions. Chemical Communications, 2016, 52, 11567-11570.	4.1	32
59	Recent advances in single-atom catalysts and single-atom alloys: opportunities for exploring the uncharted phase space in-between. Current Opinion in Chemical Engineering, 2020, 29, 67-73.	7.8	32
60	Theoretical Study of Ethylene Hydroformylation on Atomically Dispersed Rh/Al₂O₃ Catalysts: Reaction Mechanism and Influence of the ReO_{<i>x</i>} Promoter. ACS Catalysis, 2021, 11, 9506-9518.	11.2	31
61	<i>Why Seeing Is Not Always Believing</i>: Common Pitfalls in Photocatalysis and Electrocatalysis. ACS Energy Letters, 2021, 6, 707-709.	17.4	28
62	Atomically Dispersed Pt-group Catalysts: Reactivity, Uniformity, Structural Evolution, and Paths to Increased Functionality. Journal of Physical Chemistry Letters, 2020, 11, 10114-10123.	4.6	24
63	Scaled Degree of Rate Control: Identifying Elementary Steps That Control Differences in Performance of Transition-Metal Catalysts. ACS Catalysis, 2016, 6, 5268-5272.	11.2	23
64	Design of Plasmonic Platforms for Selective Molecular Sensing Based on Surface-Enhanced Raman Spectroscopy. Journal of Physical Chemistry C, 2012, 116, 9824-9829.	3.1	22
65	A Heterogeneous Pt-ReO_{<i>x</i>}/C Catalyst for Making Renewable Adipates in One Step from Sugar Acids. ACS Catalysis, 2021, 11, 95-109.	11.2	20
66	Monitoring Chemical Reactions with Terahertz Rotational Spectroscopy. ACS Photonics, 2018, 5, 3097-3106.	6.6	19
67	Chemical Production Using Light: Are Sustainable Photons Cheap Enough?. ACS Energy Letters, 2022, 7, 880-884.	17.4	18
68	Single-step catalytic conversion of furfural to 2-pentanol over bimetallic Coâ€"Cu catalysts. Reaction Chemistry and Engineering, 2019, 4, 261-267.	3.7	17
69	Support functionalization as an approach for modifying activation entropies of catalytic reactions on atomically dispersed metal sites. Journal of Catalysis, 2021, 404, 883-896.	6.2	17
70	A general and robust approach for defining and solving microkinetic catalytic systems. AIChE Journal, 2015, 61, 188-199.	3.6	15
71	Evaluation of platinum catalysts for naval submarine pollution control. Applied Catalysis B: Environmental, 2017, 203, 533-540.	20.2	15
72	Insights into Spectator-Directed Catalysis: CO Adsorption on Amine-Capped Platinum Nanoparticles on Oxide Supports. ACS Applied Materials & Interfaces, 2020, 12, 27765-27776.	8.0	14

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73	Enhancing sintering resistance of atomically dispersed catalysts in reducing environments with organic monolayers. Green Energy and Environment, 2022, 7, 1263-1269.	8.7	12
74	Critical role of interfacial effects on the reactivity of semiconductor-cocatalyst junctions for photocatalytic oxygen evolution from water. Catalysis Science and Technology, 2016, 6, 6836-6844.	4.1	11
75	Gas Diffusion Electrodes for CO₂ and N₂ Reduction: A Virtual Issue. ACS Energy Letters, 2022, 7, 1469-1472.	17.4	11
76	Surface-Mediated Processes for Energy Production and Conversion: Critical Considerations in Model System Design for DFT Calculations. ACS Energy Letters, 2018, 3, 3015-3016.	17.4	10
77	Theoretical and Experimental Characterization of Adsorbed CO and NO on Î³-Al₂O₃-Supported Rh Nanoparticles. Journal of Physical Chemistry C, 2021, 125, 19733-19755.	3.1	9
78	Alumina Graphene Catalytic Condenser for Programmable Solid Acids. Jacs Au, 2022, 2, 1123-1133.	7.9	9
79	Selective Reduction of Carboxylic Acids to Aldehydes with Promoted MoO₃ Catalysts. ACS Catalysis, 2022, 12, 6313-6324.	11.2	8
80	Reply to: Distinguishing thermal from non-thermal contributions to plasmonic hydrodefluorination. Nature Catalysis, 2022, 5, 247-250.	34.4	7
81	Dynamic Pt Coordination in Dilute AgPt Alloy Nanoparticle Catalysts Under Reactive Environments. Topics in Catalysis, 2022, 65, 1587-1603.	2.8	6
82	Fundamental insights into heterogeneous single-atom catalysis. Journal of Chemical Physics, 2021, 155, 210401.	3.0	6
83	Energy Selects. ACS Energy Letters, 2019, 4, 2021-2023.	17.4	2
84	We Editors Are Authors, Too. ACS Energy Letters, 2019, 4, 249-250.	17.4	2
85	Aggregation of CeO₂ particles with aligned grains drives sintering of Pt single atoms in Pt/CeO₂ catalysts. Journal of Materials Chemistry A, 2022, 10, 7029-7035.	10.3	2
86	Resonant and Selective Excitation of Photocatalytically Active Defect Sites in TiO₂. ACS Applied Materials & Interfaces, 2019, 11, 10351-10355.	8.0	1
87	Automating Academic Laboratories: Promoting Reliability, Productivity, and Safety. ACS Energy Letters, 2020, 5, 2737-2738.	17.4	1
88	Elucidating CO Oxidation Pathways on Rh Atoms and Clusters on the â€œ29â€•Cu₂O/Cu(111) Surface. Journal of Physical Chemistry C, 2022, 126, 11091-11102.	3.1	1
89	Energy Spotlight. ACS Energy Letters, 2020, 5, 3051-3052.	17.4	0
90	Energy Spotlight. ACS Energy Letters, 2021, 6, 2359-2361.	17.4	0

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91	Synthesis of Heteroatom Rhâ€“ReOx Atomically Dispersed Species on Al2O3 and Their Tunable Catalytic Reactivity in Ethylene Hydroformylation. Microscopy and Microanalysis, 2021, 27, 1570-1571.	0.4	0
92	Sustainable Photons. ACS Energy Letters, 2022, 7, 843-843.	17.4	0