

Phillip Christopher

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

81 papers	12,225 citations	38 h-index	94 g-index
94 ext. papers	14,329 ext. citations	14 avg, IF	7.12 L-index

#	Paper	IF	Citations
81	Plasmonic-metal nanostructures for efficient conversion of solar to chemical energy. <i>Nature Materials</i> , 2011 , 10, 911-21	27	3569
80	Visible-light-enhanced catalytic oxidation reactions on plasmonic silver nanostructures. <i>Nature Chemistry</i> , 2011 , 3, 467-72	17.6	1390
79	Direct Photocatalysis by Plasmonic Nanostructures. <i>ACS Catalysis</i> , 2014 , 4, 116-128	13.1	627
78	Singular characteristics and unique chemical bond activation mechanisms of photocatalytic reactions on plasmonic nanostructures. <i>Nature Materials</i> , 2012 , 11, 1044-50	27	590
77	Quantifying hot carrier and thermal contributions in plasmonic photocatalysis. <i>Science</i> , 2018 , 362, 69-72	33.3	494
76	Isolated metal active site concentration and stability control catalytic CO ₂ reduction selectivity. <i>Journal of the American Chemical Society</i> , 2015 , 137, 3076-84	16.4	402
75	Adsorbate-mediated strong metal-support interactions in oxide-supported Rh catalysts. <i>Nature Chemistry</i> , 2017 , 9, 120-127	17.6	401
74	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 TiO ₂ . <i>Journal of the American Chemical Society</i> , 2017 , 139, 14150-14165	16.4	333
73	Enhancing Photochemical Activity of Semiconductor Nanoparticles with Optically Active Ag Nanostructures: Photochemistry Mediated by Ag Surface Plasmons. <i>Journal of Physical Chemistry C</i> , 2010 , 114, 9173-9177	3.8	279
72	Structural evolution of atomically dispersed Pt catalysts dictates reactivity. <i>Nature Materials</i> , 2019 , 18, 746-751	27	250
71	Predictive Model for the Design of Plasmonic Metal/Semiconductor Composite Photocatalysts. <i>ACS Catalysis</i> , 2011 , 1, 1441-1447	13.1	241
70	Engineering selectivity in heterogeneous catalysis: Ag nanowires as selective ethylene epoxidation catalysts. <i>Journal of the American Chemical Society</i> , 2008 , 130, 11264-5	16.4	240
69	Catalytic and photocatalytic transformations on metal nanoparticles with targeted geometric and plasmonic properties. <i>Accounts of Chemical Research</i> , 2013 , 46, 1890-9	24.3	213
68	Light-driven methane dry reforming with single atomic site antenna-reactor plasmonic photocatalysts. <i>Nature Energy</i> , 2020 , 5, 61-70	62.3	213
67	Controlling catalytic selectivity on metal nanoparticles by direct photoexcitation of adsorbate-metal bonds. <i>Nano Letters</i> , 2014 , 14, 5405-12	11.5	182
66	Utilizing Quantitative in Situ FTIR Spectroscopy To Identify Well-Coordinated Pt Atoms as the Active Site for CO Oxidation on Al ₂ O ₃ -Supported Pt Catalysts. <i>ACS Catalysis</i> , 2016 , 6, 5599-5609	13.1	168
65	Hot Charge Carrier Transmission from Plasmonic Nanostructures. <i>Annual Review of Physical Chemistry</i> , 2017 , 68, 379-398	15.7	159

64	Approaches for Understanding and Controlling Interfacial Effects in Oxide-Supported Metal Catalysts. <i>ACS Catalysis</i> , 2018 , 8, 7368-7387	13.1	157
63	Balancing Near-Field Enhancement, Absorption, and Scattering for Effective Antenna-Reactor Plasmonic Photocatalysis. <i>Nano Letters</i> , 2017 , 17, 3710-3717	11.5	155
62	Shape- and Size-Specific Chemistry of Ag Nanostructures in Catalytic Ethylene Epoxidation. <i>ChemCatChem</i> , 2010 , 2, 78-83	5.2	147
61	Quantitative and Atomic-Scale View of CO-Induced Pt Nanoparticle Surface Reconstruction at Saturation Coverage via DFT Calculations Coupled with in Situ TEM and IR. <i>Journal of the American Chemical Society</i> , 2017 , 139, 4551-4558	16.4	124
60	Nature of stable single atom Pt catalysts dispersed on anatase TiO ₂ . <i>Journal of Catalysis</i> , 2018 , 367, 104-114	13.4	117
59	Support Induced Control of Surface Composition in Cu ₂ Ni/TiO ₂ Catalysts Enables High Yield Co-Conversion of HMF and Furfural to Methylated Furans. <i>ACS Catalysis</i> , 2017 , 7, 4070-4082	13.1	108
58	Response to Comment on "Quantifying hot carrier and thermal contributions in plasmonic photocatalysis". <i>Science</i> , 2019 , 364,	33.3	102
57	Rh single atoms on TiO dynamically respond to reaction conditions by adapting their site. <i>Nature Communications</i> , 2019 , 10, 4488	17.4	99
56	Uniformity Is Key in Defining Structure-Function Relationships for Atomically Dispersed Metal Catalysts: The Case of Pt/CeO. <i>Journal of the American Chemical Society</i> , 2020 , 142, 169-184	16.4	90
55	Plasmon-Mediated Catalytic O ₂ Dissociation on Ag Nanostructures: Hot Electrons or Near Fields?. <i>ACS Energy Letters</i> , 2019 , 4, 1803-1809	20.1	86
54	Mechanism of CO ₂ reduction by H ₂ on Ru(0 0 0 1) and general selectivity descriptors for late-transition metal catalysts. <i>Journal of Catalysis</i> , 2016 , 343, 86-96	7.3	80
53	Recent Developments in Nitrogen Reduction Catalysts: A Virtual Issue. <i>ACS Energy Letters</i> , 2019 , 4, 163-166	16.1	68
52	Using probe molecule FTIR spectroscopy to identify and characterize Pt-group metal based single atom catalysts. <i>Chinese Journal of Catalysis</i> , 2017 , 38, 1473-1480	11.3	62
51	First-principles design of a single-atom alloy propane dehydrogenation catalyst. <i>Science</i> , 2021 , 372, 1444-1447	33.3	62
50	PHYSICS. Plasmons at the interface. <i>Science</i> , 2015 , 349, 587-8	33.3	57
49	Effects of Cu ₂ Ni Bimetallic Catalyst Composition and Support on Activity, Selectivity, and Stability for Furfural Conversion to 2-Methylfuran. <i>ACS Sustainable Chemistry and Engineering</i> , 2018 , 6, 2152-2161	8.3	52
48	Integration of heterogeneous and biochemical catalysis for production of fuels and chemicals from biomass. <i>Current Opinion in Biotechnology</i> , 2017 , 45, 127-135	11.4	47
47	Unifying Mechanistic Analysis of Factors Controlling Selectivity in Fructose Dehydration to 5-Hydroxymethylfurfural by Homogeneous Acid Catalysts in Aprotic Solvents. <i>ACS Catalysis</i> , 2018 , 8, 5591-5600	13.1	46

46	Synthesis of Heteroatom RhReOx Atomically Dispersed Species on Al ₂ O ₃ and Their Tunable Catalytic Reactivity in Ethylene Hydroformylation. <i>ACS Catalysis</i> , 2019 , 9, 10899-10912	13.1	45
45	Adsorbate Specificity in Hot Electron Driven Photochemistry on Catalytic Metal Surfaces. <i>Journal of Physical Chemistry C</i> , 2014 , 118, 28017-28031	3.8	44
44	Influence of Metal Oxide Support Acid Sites on Cu-Catalyzed Nonoxidative Dehydrogenation of Ethanol to Acetaldehyde. <i>ACS Catalysis</i> , 2019 , 9, 3537-3550	13.1	42
43	Photon Energy Threshold in Direct Photocatalysis with Metal Nanoparticles: Key Evidence from the Action Spectrum of the Reaction. <i>Journal of Physical Chemistry Letters</i> , 2017 , 8, 2526-2534	6.4	38
42	Relationship between Atomic Scale Structure and Reactivity of Pt Catalysts: Hydrodeoxygenation of m-Cresol over Isolated Pt Cations and Clusters. <i>ACS Catalysis</i> , 2020 , 10, 595-603	13.1	37
41	Impact of chemical interface damping on surface plasmon dephasing. <i>Faraday Discussions</i> , 2019 , 214, 59-72	3.6	36
40	Plasmon-driven carbon-fluorine (C(sp ³)F) bond activation with mechanistic insights into hot-carrier-mediated pathways. <i>Nature Catalysis</i> , 2020 , 3, 564-573	36.5	29
39	Non-plasmonic metal nanoparticles as visible light photocatalysts for the selective oxidation of aliphatic alcohols with molecular oxygen at near ambient conditions. <i>Chemical Communications</i> , 2016 , 52, 11567-70	5.8	29
38	Overcoming Limitation in the Design of Selective Solid Catalysts by Manipulating Shape and Size of Catalytic Particles: Epoxidation Reactions on Silver. <i>ChemCatChem</i> , 2010 , 2, 1061-1063	5.2	29
37	Combining In-Situ Transmission Electron Microscopy and Infrared Spectroscopy for Understanding Dynamic and Atomic-Scale Features of Supported Metal Catalysts. <i>Journal of Physical Chemistry C</i> , 2018 , 122, 25143-25157	3.8	29
36	Atomically Dispersed Rh Active Sites on Oxide Supports with Controlled Acidity for Gas-Phase Halide-Free Methanol Carbonylation to Acetic Acid. <i>Industrial & Engineering Chemistry Research</i> , 2019 , 58, 12632-12641	3.9	26
35	Photochemistry of Plasmonic Titanium Nitride Nanocrystals. <i>Journal of Physical Chemistry C</i> , 2019 , 123, 21796-21804	3.8	24
34	Nitrate Removal via a Formate Radical-Induced Photochemical Process. <i>Environmental Science & Technology</i> , 2019 , 53, 316-324	10.3	24
33	Hybrid Catalytic Biorefining of Hardwood Biomass to Methylated Furans and Depolymerized Technical Lignin. <i>ACS Sustainable Chemistry and Engineering</i> , 2018 , 6, 10587-10594	8.3	22
32	Low-Temperature Ammonia Production during NO Reduction by CO Is Due to Atomically Dispersed Rhodium Active Sites. <i>ACS Catalysis</i> , 2020 , 10, 5217-5222	13.1	21
31	Scaled Degree of Rate Control: Identifying Elementary Steps That Control Differences in Performance of Transition-Metal Catalysts. <i>ACS Catalysis</i> , 2016 , 6, 5268-5272	13.1	19
30	Design of Plasmonic Platforms for Selective Molecular Sensing Based on Surface-Enhanced Raman Spectroscopy. <i>Journal of Physical Chemistry C</i> , 2012 , 116, 9824-9829	3.8	19
29	Dynamic Control of Elementary Step Energetics via Pulsed Illumination Enhances Photocatalysis on Metal Nanoparticles. <i>ACS Energy Letters</i> , 2020 , 5, 3518-3525	20.1	18

28	The Catalytic Mechanics of Dynamic Surfaces: Stimulating Methods for Promoting Catalytic Resonance. <i>ACS Catalysis</i> , 2020 , 10, 12666-12695	13.1	18
27	Monitoring Chemical Reactions with Terahertz Rotational Spectroscopy. <i>ACS Photonics</i> , 2018 , 5, 3097-3106	10.6	18
26	Reductant composition influences the coordination of atomically dispersed Rh on anatase TiO ₂ . <i>Catalysis Science and Technology</i> , 2020 , 10, 1597-1601	5.5	17
25	Selective Methanol Carbonylation to Acetic Acid on Heterogeneous Atomically Dispersed ReO/SiO Catalysts. <i>Journal of the American Chemical Society</i> , 2020 , 142, 14178-14189	16.4	16
24	Theory of hot electrons: general discussion. <i>Faraday Discussions</i> , 2019 , 214, 245-281	3.6	15
23	Directly Probing the Local Coordination, Charge State, and Stability of Single Atom Catalysts by Advanced Electron Microscopy: A Review. <i>Small</i> , 2021 , 17, e2006482	11	15
22	Recent advances in single-atom catalysts and single-atom alloys: opportunities for exploring the uncharted phase space in-between. <i>Current Opinion in Chemical Engineering</i> , 2020 , 29, 67-73	5.4	14
21	Single-step catalytic conversion of furfural to 2-pentanol over bimetallic Co/Cu catalysts. <i>Reaction Chemistry and Engineering</i> , 2019 , 4, 261-267	4.9	13
20	A general and robust approach for defining and solving microkinetic catalytic systems. <i>AIChE Journal</i> , 2015 , 61, 188-199	3.6	12
19	Catalytic resonance theory: parallel reaction pathway control. <i>Chemical Science</i> , 2020 , 11, 3501-3510	9.4	12
18	Atomically Dispersed Pt-group Catalysts: Reactivity, Uniformity, Structural Evolution, and Paths to Increased Functionality. <i>Journal of Physical Chemistry Letters</i> , 2020 , 11, 10114-10123	6.4	12
17	Why Seeing Is Not Always Believing: Common Pitfalls in Photocatalysis and Electrocatalysis. <i>ACS Energy Letters</i> , 2021 , 6, 707-709	20.1	12
16	Evaluation of platinum catalysts for naval submarine pollution control. <i>Applied Catalysis B: Environmental</i> , 2017 , 203, 533-540	21.8	11
15	Critical role of interfacial effects on the reactivity of semiconductor-cocatalyst junctions for photocatalytic oxygen evolution from water. <i>Catalysis Science and Technology</i> , 2016 , 6, 6836-6844	5.5	11
14	Theoretical Study of Ethylene Hydroformylation on Atomically Dispersed Rh/Al ₂ O ₃ Catalysts: Reaction Mechanism and Influence of the ReOx Promoter. <i>ACS Catalysis</i> , 2021 , 11, 9506-9518	13.1	10
13	Insights into Spectator-Directed Catalysis: CO Adsorption on Amine-Capped Platinum Nanoparticles on Oxide Supports. <i>ACS Applied Materials & Interfaces</i> , 2020 , 12, 27765-27776	9.5	9
12	Support functionalization as an approach for modifying activation entropies of catalytic reactions on atomically dispersed metal sites. <i>Journal of Catalysis</i> , 2021 , 404, 883-883	7.3	7
11	Chemical Production Using Light: Are Sustainable Photons Cheap Enough?. <i>ACS Energy Letters</i> , 2022 , 7, 880-884	20.1	6

- 10 A Heterogeneous Pt-ReO_x/C Catalyst for Making Renewable Adipates in One Step from Sugar Acids. *ACS Catalysis*, **2021**, 11, 95-109 13.1 5
- 9 Enhancing sintering resistance of atomically dispersed catalysts in reducing environments with organic monolayers. *Green Energy and Environment*, **2021**, 5.7 4
- 8 Theoretical and Experimental Characterization of Adsorbed CO and NO on γ -Al₂O₃-Supported Rh Nanoparticles. *Journal of Physical Chemistry C*, **2021**, 125, 19733-19755 3.8 4
- 7 Dynamic Pt Coordination in Dilute AgPt Alloy Nanoparticle Catalysts Under Reactive Environments. *Topics in Catalysis*, **2021**, 63, 1-10 2.3 3
- 6 Energy Selects. *ACS Energy Letters*, **2019**, 4, 2021-2023 20.1 2
- 5 Resonant and Selective Excitation of Photocatalytically Active Defect Sites in TiO₂. *ACS Applied Materials & Interfaces*, **2019**, 11, 10351-10355 9.5 1
- 4 Gas Diffusion Electrodes for CO₂ and N₂ Reduction: A Virtual Issue. *ACS Energy Letters*, **2022**, 7, 1469-1470 12.1 1
- 3 Selective Reduction of Carboxylic Acids to Aldehydes with Promoted MoO₃ Catalysts. *ACS Catalysis*, **2021**, 11, 6324-6331 13.6 1
- 2 Synthesis of Heteroatom Rh-ReO_x Atomically Dispersed Species on Al₂O₃ and Their Tunable Catalytic Reactivity in Ethylene Hydroformylation. *Microscopy and Microanalysis*, **2021**, 27, 1570-1571 0.5
- 1 Supported Metal Single-Atom Thermocatalysts for Oxidation Reactions **2022**, 377-423