# Phillip Christopher

## List of Publications by Year in Descending Order



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|---|---|---|---|
| 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 | Chemical Production Using Light: Are Sustainable Photons Cheap Enough?. *ACS Energy Letters*, **2022**, 7, 880-884 | 20.1 | 6 |
| 80 | Supported Metal Single-Atom Thermocatalysts for Oxidation Reactions **2022**, 377-423 | | |
| 79 | Gas Diffusion Electrodes for CO2 and N2 Reduction: A Virtual Issue. *ACS Energy Letters*, **2022**, 7, 1469-1473 | 20.1 | 1 |
| 78 | First-principles design of a single-atom alloy propane dehydrogenation catalyst. *Science*, **2021**, 372, 1444-1447 | 33.5 | 62 |
| 77 | Theoretical Study of Ethylene Hydroformylation on Atomically Dispersed Rh/Al2O3 Catalysts: Reaction Mechanism and Influence of the ReOx Promoter. *ACS Catalysis*, **2021**, 11, 9506-9518 | 13.1 | 10 |
| 76 | Synthesis of Heteroatom Rh ReOx Atomically Dispersed Species on Al2O3 and Their Tunable Catalytic Reactivity in Ethylene Hydroformylation. *Microscopy and Microanalysis*, **2021**, 27, 1570-1571 | 0.5 | |
| 75 | A Heterogeneous Pt-ReOx/C Catalyst for Making Renewable Adipates in One Step from Sugar Acids. *ACS Catalysis*, **2021**, 11, 95-109 | 13.1 | 5 |
| 74 | Directly Probing the Local Coordination, Charge State, and Stability of Single Atom Catalysts by Advanced Electron Microscopy: A Review. *Small*, **2021**, 17, e2006482 | 11 | 15 |
| 73 | Enhancing sintering resistance of atomically dispersed catalysts in reducing environments with organic monolayers. *Green Energy and Environment*, **2021**, | 5.7 | 4 |
| 72 | Support functionalization as an approach for modifying activation entropies of catalytic reactions on atomically dispersed metal sites. *Journal of Catalysis*, **2021**, 404, 883-883 | 7.3 | 7 |
| 71 | Theoretical and Experimental Characterization of Adsorbed CO and NO on Al2O3-Supported Rh Nanoparticles. *Journal of Physical Chemistry C*, **2021**, 125, 19733-19755 | 3.8 | 4 |
| 70 | Why Seeing Is Not Always Believing: Common Pitfalls in Photocatalysis and Electrocatalysis. *ACS Energy Letters*, **2021**, 6, 707-709 | 20.1 | 12 |
| 69 | Insights into Spectator-Directed Catalysis: CO Adsorption on Amine-Capped Platinum Nanoparticles on Oxide Supports. *ACS Applied Materials & Interfaces*, **2020**, 12, 27765-27776 | 9.5 | 9 |
| 68 | Plasmon-driven carbon fluorine (C(sp3)F) bond activation with mechanistic insights into hot-carrier-mediated pathways. *Nature Catalysis*, **2020**, 3, 564-573 | 36.5 | 29 |
| 67 | Catalytic resonance theory: parallel reaction pathway control. *Chemical Science*, **2020**, 11, 3501-3510 | 9.4 | 12 |
| 66 | Reductant composition influences the coordination of atomically dispersed Rh on anatase TiO2. *Catalysis Science and Technology*, **2020**, 10, 1597-1601 | 5.5 | 17 |
| 65 | Light-driven methane dry reforming with single atomic site antenna-reactor plasmonic photocatalysts. *Nature Energy*, **2020**, 5, 61-70 | 62.3 | 213 |

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| 64 | Uniformity Is Key in Defining Structure-Function Relationships for Atomically Dispersed Metal Catalysts: The Case of Pt/CeO. *Journal of the American Chemical Society*, **2020**, 142, 169-184 | 16.4 | 90 |
| 63 | Relationship between Atomic Scale Structure and Reactivity of Pt Catalysts: Hydrodeoxygenation of m-Cresol over Isolated Pt Cations and Clusters. *ACS Catalysis*, **2020**, 10, 595-603 | 13.1 | 37 |
| 62 | Selective Methanol Carbonylation to Acetic Acid on Heterogeneous Atomically Dispersed ReO/SiO Catalysts. *Journal of the American Chemical Society*, **2020**, 142, 14178-14189 | 16.4 | 16 |
| 61 | 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 | 5.4 | 14 |
| 60 | Atomically Dispersed Pt-group Catalysts: Reactivity, Uniformity, Structural Evolution, and Paths to Increased Functionality. *Journal of Physical Chemistry Letters*, **2020**, 11, 10114-10123 | 6.4 | 12 |
| 59 | Dynamic Control of Elementary Step Energetics via Pulsed Illumination Enhances Photocatalysis on Metal Nanoparticles. *ACS Energy Letters*, **2020**, 5, 3518-3525 | 20.1 | 18 |
| 58 | The Catalytic Mechanics of Dynamic Surfaces: Stimulating Methods for Promoting Catalytic Resonance. *ACS Catalysis*, **2020**, 10, 12666-12695 | 13.1 | 18 |
| 57 | Low-Temperature Ammonia Production during NO Reduction by CO Is Due to Atomically Dispersed Rhodium Active Sites. *ACS Catalysis*, **2020**, 10, 5217-5222 | 13.1 | 21 |
| 56 | Impact of chemical interface damping on surface plasmon dephasing. *Faraday Discussions*, **2019**, 214, 59-72 | 3.6 | 36 |
| 55 | Single-step catalytic conversion of furfural to 2-pentanol over bimetallic Co□u catalysts. *Reaction Chemistry and Engineering*, **2019**, 4, 261-267 | 4.9 | 13 |
| 54 | Theory of hot electrons: general discussion. *Faraday Discussions*, **2019**, 214, 245-281 | 3.6 | 15 |
| 53 | Structural evolution of atomically dispersed Pt catalysts dictates reactivity. *Nature Materials*, **2019**, 18, 746-751 | 27 | 250 |
| 52 | Response to Comment on "Quantifying hot carrier and thermal contributions in plasmonic photocatalysis". *Science*, **2019**, 364, | 33.3 | 102 |
| 51 | Influence of Metal Oxide Support Acid Sites on Cu-Catalyzed Nonoxidative Dehydrogenation of Ethanol to Acetaldehyde. *ACS Catalysis*, **2019**, 9, 3537-3550 | 13.1 | 42 |
| 50 | Resonant and Selective Excitation of Photocatalytically Active Defect Sites in TiO. *ACS Applied Materials & Interfaces*, **2019**, 11, 10351-10355 | 9.5 | 1 |
| 49 | Photochemistry of Plasmonic Titanium Nitride Nanocrystals. *Journal of Physical Chemistry C*, **2019**, 123, 21796-21804 | 3.8 | 24 |
| 48 | 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 | 3.9 | 26 |
| 47 | Energy Selects. *ACS Energy Letters*, **2019**, 4, 2021-2023 | 20.1 | 2 |

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| 46 | Plasmon-Mediated Catalytic O2 Dissociation on Ag Nanostructures: Hot Electrons or Near Fields?. *ACS Energy Letters*, **2019**, 4, 1803-1809 | 20.1 | 86 |
| 45 | Synthesis of Heteroatom RhReOx Atomically Dispersed Species on Al2O3 and Their Tunable Catalytic Reactivity in Ethylene Hydroformylation. *ACS Catalysis*, **2019**, 9, 10899-10912 | 13.1 | 45 |
| 44 | Rh single atoms on TiO dynamically respond to reaction conditions by adapting their site. *Nature Communications*, **2019**, 10, 4488 | 17.4 | 99 |
| 43 | Recent Developments in Nitrogen Reduction Catalysts: A Virtual Issue. *ACS Energy Letters*, **2019**, 4, 163-166 | 20.1 | 68 |
| 42 | Nitrate Removal via a Formate Radical-Induced Photochemical Process. *Environmental Science & Technology*, **2019**, 53, 316-324 | 10.3 | 24 |
| 41 | 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 | 13.1 | 46 |
| 40 | Effects of CuNi 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 | 8.3 | 52 |
| 39 | Quantifying hot carrier and thermal contributions in plasmonic photocatalysis. *Science*, **2018**, 362, 69-72 | 33.3 | 494 |
| 38 | Nature of stable single atom Pt catalysts dispersed on anatase TiO2. *Journal of Catalysis*, **2018**, 367, 104-114 | 7.3 | 117 |
| 37 | Monitoring Chemical Reactions with Terahertz Rotational Spectroscopy. *ACS Photonics*, **2018**, 5, 3097-3106 | 6.9 | 18 |
| 36 | Hybrid Catalytic Biorefining of Hardwood Biomass to Methylated Furans and Depolymerized Technical Lignin. *ACS Sustainable Chemistry and Engineering*, **2018**, 6, 10587-10594 | 8.3 | 22 |
| 35 | CombiningIn-SituTransmission 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 | 3.8 | 29 |
| 34 | Approaches for Understanding and Controlling Interfacial Effects in Oxide-Supported Metal Catalysts. *ACS Catalysis*, **2018**, 8, 7368-7387 | 13.1 | 157 |
| 33 | 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. *Journal of the American Chemical Society*, **2017**, 139, 4551-4558 | 16.4 | 124 |
| 32 | Support Induced Control of Surface Composition in CuNi/TiO2 Catalysts Enables High Yield Co-Conversion of HMF and Furfural to Methylated Furans. *ACS Catalysis*, **2017**, 7, 4070-4082 | 13.1 | 108 |
| 31 | Balancing Near-Field Enhancement, Absorption, and Scattering for Effective Antenna-Reactor Plasmonic Photocatalysis. *Nano Letters*, **2017**, 17, 3710-3717 | 11.5 | 155 |
| 30 | 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 | 6.4 | 38 |
| 29 | Integration of heterogeneous and biochemical catalysis for production of fuels and chemicals from biomass. *Current Opinion in Biotechnology*, **2017**, 45, 127-135 | 11.4 | 47 |

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| 28 | Hot Charge Carrier Transmission from Plasmonic Nanostructures. *Annual Review of Physical Chemistry*, **2017**, 68, 379-398 | 15.7 | 159 |
| 27 | Using probe molecule FTIR spectroscopy to identify and characterize Pt-group metal based single atom catalysts. *Chinese Journal of Catalysis*, **2017**, 38, 1473-1480 | 11.3 | 62 |
| 26 | 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. *Journal of the American Chemical Society*, **2017**, 139, 14150-14165 | 16.4 | 333 |
| 25 | Evaluation of platinum catalysts for naval submarine pollution control. *Applied Catalysis B: Environmental*, **2017**, 203, 533-540 | 21.8 | 11 |
| 24 | Adsorbate-mediated strong metal-support interactions in oxide-supported Rh catalysts. *Nature Chemistry*, **2017**, 9, 120-127 | 17.6 | 401 |
| 23 | 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, 11567-70 | 5.8 | 29 |
| 22 | Scaled Degree of Rate Control: Identifying Elementary Steps That Control Differences in Performance of Transition-Metal Catalysts. *ACS Catalysis*, **2016**, 6, 5268-5272 | 13.1 | 19 |
| 21 | 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 | 7.3 | 80 |
| 20 | Utilizing Quantitative in Situ 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 | 13.1 | 168 |
| 19 | 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 | 5.5 | 11 |
| 18 | A general and robust approach for defining and solving microkinetic catalytic systems. *AICHE Journal*, **2015**, 61, 188-199 | 3.6 | 12 |
| 17 | PHYSICS. Plasmons at the interface. *Science*, **2015**, 349, 587-8 | 33.3 | 57 |
| 16 | Isolated metal active site concentration and stability control catalytic CO2 reduction selectivity. *Journal of the American Chemical Society*, **2015**, 137, 3076-84 | 16.4 | 402 |
| 15 | Direct Photocatalysis by Plasmonic Nanostructures. *ACS Catalysis*, **2014**, 4, 116-128 | 13.1 | 627 |
| 14 | Controlling catalytic selectivity on metal nanoparticles by direct photoexcitation of adsorbate-metal bonds. *Nano Letters*, **2014**, 14, 5405-12 | 11.5 | 182 |
| 13 | Adsorbate Specificity in Hot Electron Driven Photochemistry on Catalytic Metal Surfaces. *Journal of Physical Chemistry C*, **2014**, 118, 28017-28031 | 3.8 | 44 |
| 12 | Catalytic and photocatalytic transformations on metal nanoparticles with targeted geometric and plasmonic properties. *Accounts of Chemical Research*, **2013**, 46, 1890-9 | 24.3 | 213 |
| 11 | Singular characteristics and unique chemical bond activation mechanisms of photocatalytic reactions on plasmonic nanostructures. *Nature Materials*, **2012**, 11, 1044-50 | 27 | 590 |

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|---|---|---|---|
| 10 | 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 |
| 9 | Predictive Model for the Design of Plasmonic Metal/Semiconductor Composite Photocatalysts. *ACS Catalysis*, **2011**, 1, 1441-1447 | 13.1 | 241 |
| 8 | Visible-light-enhanced catalytic oxidation reactions on plasmonic silver nanostructures. *Nature Chemistry*, **2011**, 3, 467-72 | 17.6 | 1390 |
| 7 | Plasmonic-metal nanostructures for efficient conversion of solar to chemical energy. *Nature Materials*, **2011**, 10, 911-21 | 27 | 3569 |
| 6 | 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 |
| 5 | Shape- and Size-Specific Chemistry of Ag Nanostructures in Catalytic Ethylene Epoxidation. *ChemCatChem*, **2010**, 2, 78-83 | 5.2 | 147 |
| 4 | 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 |
| 3 | 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 |
| 2 | Dynamic Pt Coordination in Dilute AgPt Alloy Nanoparticle Catalysts Under Reactive Environments. *Topics in Catalysis*,1 | 2.3 | 3 |
| 1 | Selective Reduction of Carboxylic Acids to Aldehydes with Promoted MoO3 Catalysts. *ACS Catalysis*,6313-6324 | 5.2 | 40 |