

E Charles H Sykes

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.

125 papers	6,453 citations	38 h-index	78 g-index
131 ext. papers	7,745 ext. citations	9.5 avg, IF	6.21 L-index

#	Paper	IF	Citations
125	Isolated metal atom geometries as a strategy for selective heterogeneous hydrogenations. <i>Science</i> , 2012 , 335, 1209-12	33.3	931
124	Selective hydrogenation of 1,3-butadiene on platinum-copper alloys at the single-atom limit. <i>Nature Communications</i> , 2015 , 6, 8550	17.4	369
123	Pt/Cu single-atom alloys as coke-resistant catalysts for efficient C-H activation. <i>Nature Chemistry</i> , 2018 , 10, 325-332	17.6	308
122	Tackling CO Poisoning with Single-Atom Alloy Catalysts. <i>Journal of the American Chemical Society</i> , 2016 , 138, 6396-9	16.4	272
121	Single-Atom Alloy Catalysis. <i>Chemical Reviews</i> , 2020 , 120, 12044-12088	68.1	227
120	Single atom alloy surface analogs in Pd _{0.18} Cu ₁₅ nanoparticles for selective hydrogenation reactions. <i>Physical Chemistry Chemical Physics</i> , 2013 , 15, 12187-96	3.6	211
119	An atomic-scale view of single-site Pt catalysis for low-temperature CO oxidation. <i>Nature Catalysis</i> , 2018 , 1, 192-198	36.5	209
118	Experimental demonstration of a single-molecule electric motor. <i>Nature Nanotechnology</i> , 2011 , 6, 625-928.7	208	
117	Single-Atom Alloys as a Reductionist Approach to the Rational Design of Heterogeneous Catalysts. <i>Accounts of Chemical Research</i> , 2019 , 52, 237-247	24.3	192
116	Hydrogen dissociation and spillover on individual isolated palladium atoms. <i>Physical Review Letters</i> , 2009 , 103, 246102	7.4	174
115	Controlling Hydrogen Activation, Spillover, and Desorption with Pd-Au Single-Atom Alloys. <i>Journal of Physical Chemistry Letters</i> , 2016 , 7, 480-5	6.4	129
114	Lonely Atoms with Special Gifts: Breaking Linear Scaling Relationships in Heterogeneous Catalysis with Single-Atom Alloys. <i>Journal of Physical Chemistry Letters</i> , 2018 , 9, 5636-5646	6.4	127
113	Graphene-like Boron-Carbon-Nitrogen Monolayers. <i>ACS Nano</i> , 2017 , 11, 2486-2493	16.7	110
112	Selective Formic Acid Dehydrogenation on Pt-Cu Single-Atom Alloys. <i>ACS Catalysis</i> , 2017 , 7, 413-420	13.1	108
111	H ₂ Activation and Spillover on Catalytically Relevant Pt ₁ Au Single Atom Alloys. <i>Journal of Physical Chemistry C</i> , 2015 , 119, 24351-24357	3.8	103
110	Elucidating the Stability and Reactivity of Surface Intermediates on Single-Atom Alloy Catalysts. <i>ACS Catalysis</i> , 2018 , 8, 5038-5050	13.1	95
109	Substrate-mediated interactions and intermolecular forces between molecules adsorbed on surfaces. <i>Accounts of Chemical Research</i> , 2003 , 36, 945-53	24.3	91

108	A quantitative single-molecule study of thioether molecular rotors. <i>ACS Nano</i> , 2008 , 2, 2385-91	16.7	90
107	Controlling a spillover pathway with the molecular cork effect. <i>Nature Materials</i> , 2013 , 12, 523-8	27	88
106	Atomic Scale Surface Structure of Pt/Cu(111) Surface Alloys. <i>Journal of Physical Chemistry C</i> , 2014 , 118, 3015-3022	3.8	78
105	Palladium-Gold single atom alloy catalysts for liquid phase selective hydrogenation of 1-hexyne. <i>Catalysis Science and Technology</i> , 2017 , 7, 4276-4284	5.5	77
104	Atomic-scale geometry and electronic structure of catalytically important Pd/Au alloys. <i>ACS Nano</i> , 2010 , 4, 1637-45	16.7	76
103	Carbon Monoxide Poisoning Resistance and Structural Stability of Single Atom Alloys. <i>Topics in Catalysis</i> , 2018 , 61, 428-438	2.3	75
102	Atomic-Scale Imaging and Electronic Structure Determination of Catalytic Sites on Pd/Cu Near Surface Alloys. <i>Journal of Physical Chemistry C</i> , 2009 , 113, 7246-7250	3.8	72
101	An Atomic-Scale View of Palladium Alloys and their Ability to Dissociate Molecular Hydrogen. <i>ChemCatChem</i> , 2011 , 3, 607-614	5.2	69
100	First-principles design of a single-atom alloy propane dehydrogenation catalyst. <i>Science</i> , 2021 , 372, 1444-1447	35.9	62
99	Preparation, Structure, and Surface Chemistry of Ni-Au Single Atom Alloys. <i>Journal of Physical Chemistry C</i> , 2016 , 120, 13574-13580	3.8	60
98	Water co-catalyzed selective dehydrogenation of methanol to formaldehyde and hydrogen. <i>Surface Science</i> , 2016 , 650, 121-129	1.8	60
97	Molecular-scale perspective of water-catalyzed methanol dehydrogenation to formaldehyde. <i>ACS Nano</i> , 2013 , 7, 6181-7	16.7	60
96	Observation and manipulation of subsurface hydride in Pd[111] and its effect on surface chemical, physical, and electronic properties. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2005 , 102, 17907-11	11.5	59
95	Identifying reactive intermediates in the Ullmann coupling reaction by scanning tunneling microscopy and spectroscopy. <i>Journal of Physical Chemistry A</i> , 2009 , 113, 13167-72	2.8	54
94	Long Range Chiral Imprinting of Cu(110) by Tartaric Acid. <i>Journal of Physical Chemistry C</i> , 2013 , 117, 22290-22297	30.2	51
93	Atomic-scale insight into the formation, mobility and reaction of Ullmann coupling intermediates. <i>Chemical Communications</i> , 2014 , 50, 1006-8	5.8	50
92	Substrate-mediated intermolecular interactions: a quantitative single molecule analysis. <i>Journal of the American Chemical Society</i> , 2005 , 127, 7255-60	16.4	47
91	Guidelines to Achieving High Selectivity for the Hydrogenation of α -Unsaturated Aldehydes with Bimetallic and Dilute Alloy Catalysts: A Review. <i>Chemical Reviews</i> , 2020 , 120, 12834-12872	68.1	47

- 90 The Real Structure of Naturally Chiral Cu{643}. *Journal of Physical Chemistry C*, **2008**, 112, 11086-11089 3.8 45
- 89 Visualization of hydrogen bonding and associated chirality in methanol hexamers. *Physical Review Letters*, **2011**, 107, 256101 7.4 41
- 88 Importance of Kinetics in Surface Alloying: A Comparison of the Diffusion Pathways of Pd and Ag Atoms on Cu(111). *Journal of Physical Chemistry C*, **2009**, 113, 12863-12869 3.8 39
- 87 Quantum tunneling enabled self-assembly of hydrogen atoms on Cu(111). *ACS Nano*, **2012**, 6, 10115-21 16.7 37
- 86 A Window on Surface Explosions: Tartaric Acid on Cu(110). *Journal of Physical Chemistry C*, **2013**, 117, 7577-7588 3.8 36
- 85 High-loading single Pt atom sites [Pt-O(OH)] catalyze the CO PROX reaction with high activity and selectivity at mild conditions. *Science Advances*, **2020**, 6, eaba3809 14.3 35
- 84 Significant quantum effects in hydrogen activation. *ACS Nano*, **2014**, 8, 4827-35 16.7 35
- 83 Dry Dehydrogenation of Ethanol on PtAu Single Atom Alloys. *Topics in Catalysis*, **2018**, 61, 328-335 2.3 34
- 82 Integrated Catalysis-Surface Science-Theory Approach to Understand Selectivity in the Hydrogenation of 1-Hexyne to 1-Hexene on PdAu Single-Atom Alloy Catalysts. *ACS Catalysis*, **2019**, 9, 8757-8765 13.1 34
- 81 Adsorption, Assembly, and Dynamics of Dibutyl Sulfide on Au{111}. *Journal of Physical Chemistry C*, **2010**, 114, 14583-14589 3.8 34
- 80 Microscopic View of the Active Sites for Selective Dehydrogenation of Formic Acid on Cu(111). *ACS Catalysis*, **2015**, 5, 7371-7378 13.1 32
- 79 Mode-selective electrical excitation of a molecular rotor. *Chemistry - A European Journal*, **2009**, 15, 9678-9688 4.8 32
- 78 Directing reaction pathways via in situ control of active site geometries in PdAu single-atom alloy catalysts. *Nature Communications*, **2021**, 12, 1549 17.4 32
- 77 Structurally Accurate Model for the β -Structure of Cu₂O/Cu(111): A DFT and STM Study. *Journal of Physical Chemistry C*, **2016**, 120, 10879-10886 3.8 31
- 76 Dissociative Hydrogen Adsorption on Close-Packed Cobalt Nanoparticle Surfaces. *Journal of Physical Chemistry C*, **2012**, 116, 25868-25873 3.8 30
- 75 Hydrogen-Bonded Networks in Surface-Bound Methanol. *Journal of Physical Chemistry C*, **2011**, 115, 9153-9163 3.9 28
- 74 Chirality and Rotation of Asymmetric Surface-Bound Thioethers. *Journal of Physical Chemistry C*, **2011**, 115, 897-901 3.8 27
- 73 Time-resolved studies of individual molecular rotors. *Journal of Physics Condensed Matter*, **2010**, 22, 264006 4.6 27

72	Hydrogen-bonded assembly of methanol on Cu(111). <i>Physical Chemistry Chemical Physics</i> , 2012 , 14, 11845-11852	16.2	26
71	Water-Ice Analogues of Polycyclic Aromatic Hydrocarbons: Water Nanoclusters on Cu(111). <i>Journal of the American Chemical Society</i> , 2017 , 139, 6403-6410	16.4	25
70	Surface Structure Dependence of the Dry Dehydrogenation of Alcohols on Cu(111) and Cu(110). <i>Journal of Physical Chemistry C</i> , 2017 , 121, 12800-12806	3.8	25
69	Enhancement of low-energy electron emission in 2D radioactive films. <i>Nature Materials</i> , 2015 , 14, 904-7	27	25
68	Hydrogen Dissociation, Spillover, and Desorption from Cu-Supported Co Nanoparticles. <i>Journal of Physical Chemistry Letters</i> , 2014 , 5, 3380-5	6.4	24
67	Structure and energetics of hydrogen-bonded networks of methanol on close packed transition metal surfaces. <i>Journal of Chemical Physics</i> , 2014 , 141, 014701	3.9	24
66	Charge-Transfer-Induced Magic Cluster Formation of Azaborine Heterocycles on Noble Metal Surfaces. <i>Journal of Physical Chemistry C</i> , 2016 , 120, 6020-6030	3.8	23
65	Effect of head-group chemistry on surface-mediated molecular self-assembly. <i>Chemistry - A European Journal</i> , 2012 , 18, 7169-78	4.8	22
64	Visualization of compression and spillover in a coadsorbed system: syngas on cobalt nanoparticles. <i>ACS Nano</i> , 2013 , 7, 4384-92	16.7	22
63	Regular scanning tunneling microscope tips can be intrinsically chiral. <i>Physical Review Letters</i> , 2011 , 106, 010801	7.4	22
62	Understanding the Rotational Mechanism of a Single Molecule: STM and DFT Investigations of Dimethyl Sulfide Molecular Rotors on Au(111). <i>Journal of Physical Chemistry C</i> , 2010 , 114, 3152-3155	3.8	21
61	Engineering Dislocation Networks for the Directed Assembly of Two-Dimensional Rotor Arrays. <i>Journal of Physical Chemistry C</i> , 2009 , 113, 5895-5898	3.8	21
60	Magic Electret Clusters of 4-Fluorostyrene on Metal Surfaces. <i>Journal of Physical Chemistry Letters</i> , 2012 , 3, 2069-2075	6.4	20
59	Accelerated Cu ₂ O Reduction by Single Pt Atoms at the Metal-Oxide Interface. <i>ACS Catalysis</i> , 2020 , 10, 4215-4226	13.1	19
58	Rediscovering cobalt's surface chemistry. <i>Physical Chemistry Chemical Physics</i> , 2012 , 14, 7215-24	3.6	19
57	Spontaneous transmission of chirality through multiple length scales. <i>Chemistry - A European Journal</i> , 2011 , 17, 7205-12	4.8	18
56	The interplay of covalency, hydrogen bonding, and dispersion leads to a long range chiral network: The example of 2-butanol. <i>Journal of Chemical Physics</i> , 2016 , 144, 094703	3.9	17
55	Controlling selectivity in the Ullmann reaction on Cu(111). <i>Chemical Communications</i> , 2017 , 53, 7816-7819	19.8	16

54	The effect of single pd atoms on the energetics of recombinative O ₂ desorption from Au(111). <i>Surface Science</i> , 2018 , 677, 296-300	1.8	16
53	Atomic-Scale Surface Structure and CO Tolerance of NiCu Single-Atom Alloys. <i>Journal of Physical Chemistry C</i> , 2019 , 123, 28142-28147	3.8	16
52	Correlated rotational switching in two-dimensional self-assembled molecular rotor arrays. <i>Nature Communications</i> , 2017 , 8, 16057	17.4	16
51	Enantiospecific Kinetics in Surface Adsorption: Propylene Oxide on Pt(111) Surfaces. <i>Journal of Physical Chemistry C</i> , 2013 , 117, 18588-18594	3.8	16
50	Facilitating hydrogen atom migration via a dense phase on palladium islands to a surrounding silver surface. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020 , 117, 22657-22664	11.5	16
49	Combining STM, RAIRS and TPD to Decipher the Dispersion and Interactions Between Active Sites in RhCu Single-Atom Alloys. <i>ChemCatChem</i> , 2020 , 12, 488-493	5.2	16
48	Water activation by single Pt atoms supported on a Cu ₂ O thin film. <i>Journal of Catalysis</i> , 2018 , 364, 166-173	7.3	15
47	Asymmetric Thioethers as Building Blocks for Chiral Monolayers. <i>Topics in Catalysis</i> , 2011 , 54, 1357-1367	2.3	15
46	A Comparative Scanning Tunneling Microscopy Study of Physisorbed Linear Quadrupolar Molecules: C ₂ N ₂ and CS ₂ on Au{111} at 4 K. <i>Journal of Physical Chemistry A</i> , 2003 , 107, 8124-8129	2.8	15
45	CO Adsorption on the Cu ₂ O/Cu(111) Surface: An Integrated DFT, STM, and TPD Study. <i>Journal of Physical Chemistry C</i> , 2016 , 120, 25387-25394	3.8	15
44	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
43	Carbon Monoxide Mediated Hydrogen Release from PtCu Single-Atom Alloys: The Punctured Molecular Cork Effect. <i>Journal of Physical Chemistry C</i> , 2019 , 123, 10419-10428	3.8	13
42	Efficient and selective carbon-carbon coupling on coke-resistant PdAu single-atom alloys. <i>Chemical Communications</i> , 2019 , 55, 15085-15088	5.8	13
41	Controlling Hydrocarbon (De)Hydrogenation Pathways with Bifunctional PtCu Single-Atom Alloys. <i>Journal of Physical Chemistry Letters</i> , 2020 , 11, 8751-8757	6.4	12
40	Anhydrous Methanol and Ethanol Dehydrogenation at Cu(111) Step Edges. <i>Journal of Physical Chemistry C</i> , 2018 , 122, 21952-21962	3.8	12
39	Effect of BN/CC Isosterism on the Thermodynamics of Surface and Bulk Binding: 1,2-Dihydro-1,2-azaborine vs Benzene. <i>Journal of Physical Chemistry C</i> , 2015 , 119, 14624-14631	3.8	11
38	Influence of step faceting on the enantiospecific decomposition of aspartic acid on chiral Cu surfaces vicinal to Cu{111}. <i>Chemical Communications</i> , 2016 , 52, 11263-11266	5.8	11
37	An Atomic Scale View of Methanol Reactivity at the Cu(1 1 1)/CuO _x Interface. <i>ChemCatChem</i> , 2013 , 5, 2684-2690	5.2	11

36	Elucidating the composition of PtAg surface alloys with atomic-scale imaging and spectroscopy. <i>Journal of Chemical Physics</i> , 2019 , 151, 164705	3.9	10
35	Dynamics of molecular adsorption and rotation on nonequilibrium sites. <i>Langmuir</i> , 2010 , 26, 15350-5	4	10
34	Chiral nanoscale pores created during the surface explosion of tartaric acid on Cu(111). <i>Chemical Communications</i> , 2016 , 52, 14282-14285	5.8	9
33	Impact of branching on the supramolecular assembly of thioethers on Au(111). <i>Journal of Chemical Physics</i> , 2015 , 142, 101915	3.9	9
32	Ullmann coupling mediated assembly of an electrically driven altitudinal molecular rotor. <i>Physical Chemistry Chemical Physics</i> , 2015 , 17, 31931-7	3.6	9
31	Electric nanocar equipped with four-wheel drive gets taken for its first spin. <i>Angewandte Chemie - International Edition</i> , 2012 , 51, 4277-8	16.4	9
30	Squeezing and stretching Pd thin films: A high-resolution STM study of Pd/Au(111) and Pd/Cu(111) bimetallics. <i>Surface Science</i> , 2016 , 646, 1-4	1.8	8
29	Chirality at two-dimensional surfaces: A perspective from small molecule alcohol assembly on Au(111). <i>Journal of Chemical Physics</i> , 2018 , 149, 034703	3.9	8
28	A Reverse Science Fair that Connects High School Students with University Researchers. <i>Journal of Chemical Education</i> , 2017 , 94, 171-176	2.4	7
27	Characterizing the geometric and electronic structure of defects in the "29" copper surface oxide. <i>Journal of Chemical Physics</i> , 2017 , 147, 224706	3.9	7
26	Adsorption Site Distributions on Cu(111), Cu(221), and Cu(643) as Determined by Xe Adsorption. <i>Journal of Physical Chemistry C</i> , 2010 , 114, 18566-18575	3.8	7
25	Surface-Templated Assembly of Molecular Methanol on the Thin Film $\sqrt{9}\times\sqrt{9}$ Cu(111) Surface Oxide. <i>Journal of Physical Chemistry C</i> , 2019 , 123, 2911-2921	3.8	7
24	Surface facet dependence of competing alloying mechanisms. <i>Journal of Chemical Physics</i> , 2020 , 153, 244702	3.9	6
23	Developing single-site Pt catalysts for the preferential oxidation of CO: A surface science and first principles-guided approach. <i>Applied Catalysis B: Environmental</i> , 2021 , 284, 119716	21.8	6
22	Controlling Molecular Switching via Chemical Functionality: Ethyl vs Methoxy Rotors. <i>Journal of Physical Chemistry C</i> , 2019 , 123, 23738-23746	3.8	5
21	Catalytic sites are finally in sight. <i>Nature Materials</i> , 2019 , 18, 663-664	27	5
20	Dynamic Restructuring Induced Oxygen Activation on AgCu Near-Surface Alloys. <i>Journal of Physical Chemistry Letters</i> , 2020 , 11, 5844-5848	6.4	5
19	Atomic-Scale Picture of the Composition, Decay, and Oxidation of Two-Dimensional Radioactive Films. <i>ACS Nano</i> , 2016 , 10, 2152-8	16.7	5

18	Periodic Trends in Adsorption Energies around Single-Atom Alloy Active Sites. <i>Journal of Physical Chemistry Letters</i> , 2021 , 12, 10060-10067	6.4	5
17	Mechanistic and Electronic Insights into a Working NiAu Single-Atom Alloy Ethanol Dehydrogenation Catalyst.. <i>Journal of the American Chemical Society</i> , 2021 , 143, 21567-21579	16.4	5
16	Understanding Enantioselective Interactions by Pulling Apart Molecular Rotor Complexes. <i>ACS Nano</i> , 2019 , 13, 5939-5946	16.7	4
15	Towards the directional transport of molecules on surfaces. <i>Tetrahedron</i> , 2017 , 73, 4858-4863	2.4	3
14	Mechanistic insights into carbon-carbon coupling on NiAu and PdAu single-atom alloys. <i>Journal of Chemical Physics</i> , 2021 , 154, 204701	3.9	3
13	Templated Growth of a Homochiral Thin Film Oxide. <i>ACS Nano</i> , 2020 , 14, 4682-4688	16.7	2
12	Evidence for biological effects in the radiosensitization of leukemia cell lines by PEGylated gold nanoparticles. <i>Journal of Nanoparticle Research</i> , 2020 , 22, 1	2.3	2
11	Ein elektrisches Nanoauto mit Vierradantrieb. <i>Angewandte Chemie</i> , 2012 , 124, 4351-4352	3.6	2
10	Visualizing the origin of rotational entropy effects in coadsorbed systems. <i>Physical Review Research</i> , 2020 , 2,	3.9	2
9	Opportunities in the Synthesis and Design of Radioactive Thin Films and Nanoparticles. <i>Journal of Physical Chemistry Letters</i> , 2020 , 11, 4017-4028	6.4	1
8	Microscopic insights into long-range 1D ordering in a dense semi-disordered molecular overlayer. <i>Chemical Communications</i> , 2021 , 57, 5937-5940	5.8	1
7	Enantioselective Effects in the Electrical Excitation of Amine Single-Molecule Rotors. <i>Journal of Physical Chemistry C</i> , 2021 , 125, 3584-3589	3.8	1
6	Tuning the Product Selectivity of Single-Atom Alloys by Active Site Modification. <i>Surface Science</i> , 2021 , 717, 121990	1.8	0
5	Mechanistic insights into the oxidation of catalytically relevant AgCu near-surface alloy interfaces. <i>Aggregate</i> , e133	22.9	0
4	Low-cost spectrum analyzer for trouble shooting noise sources in scanning probe microscopy. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2020 , 38, 061202	2.9	0
3	Visualizing and Understanding Ordered Surface Phases during the Ullmann Coupling Reaction. <i>Journal of Physical Chemistry C</i> , 2021 , 125, 7675-7685	3.8	0
2	Scanning Tunneling Microscopy and Single Molecule Conductance. <i>ACS Symposium Series</i> , 2010 , 123-133	0.4	
1	Comparison of 2D crystals formed by dissociative adsorption of fluorinated and nonfluorinated alkyl iodides on Cu(111). <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2021 , 39, 063211	2.9	

