

Aaron M Appel

List of Publications by Year in descending order

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68
papers

6,781
citations

87723

38
h-index

95083

68
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docs citations

71
times ranked

7092
citing authors

#	ARTICLE	IF	CITATIONS
1	Frontiers, Opportunities, and Challenges in Biochemical and Chemical Catalysis of CO ₂ Fixation. <i>Chemical Reviews</i> , 2013, 113, 6621-6658.	23.0	1,786
2	Thermodynamic Hydricity of Transition Metal Hydrides. <i>Chemical Reviews</i> , 2016, 116, 8655-8692.	23.0	365
3	[Ni(P ^{sup} Ph ^{sup}) ₂ N ^{sup} C ₆ H ₄ X ^{sup}) ₂] ²⁺ Complexes as Electrocatalysts for H ₂ Production: Effect of Substituents, Acids, and Water on Catalytic Rates. <i>Journal of the American Chemical Society</i> , 2011, 133, 5861-5872.	6.6	357
4	A Cobalt-Based Catalyst for the Hydrogenation of CO ₂ under Ambient Conditions. <i>Journal of the American Chemical Society</i> , 2013, 135, 11533-11536.	6.6	343
5	Determining the Overpotential for a Molecular Electrocatalyst. <i>ACS Catalysis</i> , 2014, 4, 630-633.	5.5	285
6	Production of hydrogen by electrocatalysis: making the H-H bond by combining protons and hydrides. <i>Chemical Communications</i> , 2014, 50, 3125-3143.	2.2	244
7	Molybdenum-Sulfur Dimers as Electrocatalysts for the Production of Hydrogen at Low Overpotentials. <i>Journal of the American Chemical Society</i> , 2005, 127, 12717-12726.	6.6	196
8	Standard Reduction Potentials for Oxygen and Carbon Dioxide Couples in Acetonitrile and <i>N,N</i> -Dimethylformamide. <i>Inorganic Chemistry</i> , 2015, 54, 11883-11888.	1.9	189
9	[Cu(i)(bpp)]BF ₄ : the first extended coordination network prepared solvothermally in an ionic liquid solvent. <i>Chemical Communications</i> , 2002, , 2872-2873.	2.2	175
10	Surface Immobilization of Molecular Electrocatalysts for Energy Conversion. <i>Chemistry - A European Journal</i> , 2017, 23, 7626-7641.	1.7	159
11	Thermodynamic Properties of the Ni-H Bond in Complexes of the Type [HNi(P ₂ R ₂ N ₂ R ⁺) ₂](BF ₄) _{1.1} and Evaluation of Factors That Control Catalytic Activity for Hydrogen Oxidation/Production. <i>Organometallics</i> , 2007, 26, 3918-3924.	1.1	141
12	A Molecular Copper Catalyst for Hydrogenation of CO ₂ to Formate. <i>ACS Catalysis</i> , 2015, 5, 5301-5305.	5.5	140
13	A Bimetallic Nickel-Gallium Complex Catalyzes CO ₂ Hydrogenation via the Intermediacy of an Anionic d ¹⁰ Nickel Hydride. <i>Journal of the American Chemical Society</i> , 2017, 139, 14244-14250.	6.6	128
14	Proton Delivery and Removal in [Ni(P ^{sup} R ^{sup}) ₂ N ^{sup} R ⁺) ₂] ²⁺ Hydrogen Production and Oxidation Catalysts. <i>Journal of the American Chemical Society</i> , 2012, 134, 19409-19424.	6.6	122
15	Evaluating the Thermodynamics of Electrocatalytic N ₂ Reduction in Acetonitrile. <i>ACS Energy Letters</i> , 2016, 1, 698-704.	8.8	115
16	Triphosphine-Ligated Copper Hydrides for CO ₂ Hydrogenation: Structure, Reactivity, and Thermodynamic Studies. <i>Journal of the American Chemical Society</i> , 2016, 138, 9968-9977.	6.6	109
17	Electrocatalytic Oxidation of Formate by [Ni(P ^{sup} R ^{sup}) ₂ N ^{sup} R ⁺) ₂](CH ₃ CN)] ²⁺ Complexes. <i>Journal of the American Chemical Society</i> , 2011, 133, 12767-12779.	6.6	107
18	[Ni(P ^{sup} Ph ^{sup}) ₂ N ^{sup} Bn ^{sup}) ₂](CH ₃ CN)] ²⁺ as an Electrocatalyst for H ₂ Production: Dependence on Acid Strength and Isomer Distribution. <i>ACS Catalysis</i> , 2011, 1, 777-785.	5.5	104

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19	A Cobalt Hydride Catalyst for the Hydrogenation of CO ₂ : Pathways for Catalysis and Deactivation. <i>ACS Catalysis</i> , 2014, 4, 3755-3762.	5.5	102
20	Thermochemical and Mechanistic Studies of Electrocatalytic Hydrogen Production by Cobalt Complexes Containing Pendant Amines. <i>Inorganic Chemistry</i> , 2013, 52, 14391-14403.	1.9	82
21	Designing electrochemically reversible H ₂ oxidation and production catalysts. <i>Nature Reviews Chemistry</i> , 2018, 2, 244-252.	13.8	78
22	Incorporation of Hydrogen-Bonding Functionalities into the Second Coordination Sphere of Iron-Based Water Oxidation Catalysts. <i>European Journal of Inorganic Chemistry</i> , 2013, 2013, 3846-3857.	1.0	70
23	Oxidation of Ammonia with Molecular Complexes. <i>Journal of the American Chemical Society</i> , 2020, 142, 17845-17858.	6.6	70
24	Rapid, Reversible Heterolytic Cleavage of Bound H ₂ . <i>Journal of the American Chemical Society</i> , 2013, 135, 11736-11739.	6.6	67
25	Experimental and Computational Mechanistic Studies Guiding the Rational Design of Molecular Electrocatalysts for Production and Oxidation of Hydrogen. <i>Inorganic Chemistry</i> , 2016, 55, 445-460.	1.9	67
26	Hydrogenation of CO ₂ in Water Using a Bis(diphosphine) Ni-H Complex. <i>ACS Catalysis</i> , 2017, 7, 3089-3096.	5.5	66
27	Predicting the reactivity of hydride donors in water: thermodynamic constants for hydrogen. <i>Dalton Transactions</i> , 2015, 44, 5933-5938.	1.6	64
28	Catalytic Oxidation of Alcohol via Nickel Phosphine Complexes with Pendant Amines. <i>ACS Catalysis</i> , 2014, 4, 2951-2958.	5.5	60
29	Formate oxidation via \hat{I}^2 -deprotonation in [Ni(PR ₂ NR ₂) ₂ (CH ₃ CN)] ²⁺ complexes. <i>Energy and Environmental Science</i> , 2012, 5, 6480.	15.6	58
30	Concentration of Carbon Dioxide by Electrochemically Modulated Complexation with a Binuclear Copper Complex. <i>Inorganic Chemistry</i> , 2005, 44, 3046-3056.	1.9	52
31	pH-Dependent Reduction Potentials and Proton-Coupled Electron Transfer Mechanisms in Hydrogen-Producing Nickel Molecular Electrocatalysts. <i>Inorganic Chemistry</i> , 2013, 52, 3643-3652.	1.9	50
32	Controlling Proton Delivery through Catalyst Structural Dynamics. <i>Angewandte Chemie - International Edition</i> , 2016, 55, 13509-13513.	7.2	48
33	Reversible Heterolytic Cleavage of the H-H Bond by Molybdenum Complexes: Controlling the Dynamics of Exchange Between Proton and Hydride. <i>Journal of the American Chemical Society</i> , 2017, 139, 7376-7387.	6.6	48
34	Molecular Catalysts with Diphosphine Ligands Containing Pendant Amines. <i>Chemical Reviews</i> , 2022, 122, 12427-12474.	23.0	48
35	Mechanistic insights into hydride transfer for catalytic hydrogenation of CO ₂ with cobalt complexes. <i>Dalton Transactions</i> , 2014, 43, 11803-11806.	1.6	44
36	Nickel phosphine catalysts with pendant amines for electrocatalytic oxidation of alcohols. <i>Chemical Communications</i> , 2015, 51, 6172-6174.	2.2	43

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37	Understanding the Relationship Between Kinetics and Thermodynamics in CO ₂ Hydrogenation Catalysis. ACS Catalysis, 2017, 7, 6008-6017.	5.5	43
38	Changing the Mechanism for CO ₂ Hydrogenation Using Solvent-Dependent Thermodynamics. Angewandte Chemie - International Edition, 2017, 56, 15002-15005.	7.2	42
39	Free Energy Landscapes for S-H Bonds in Cp* ₂ Mo ₂ S ₄ Complexes. Journal of the American Chemical Society, 2009, 131, 5224-5232.	6.6	39
40	Hydrogenation of CO ₂ at Room Temperature and Low Pressure with a Cobalt Tetraphosphine Catalyst. Inorganic Chemistry, 2017, 56, 8580-8589.	1.9	39
41	Thermodynamic and kinetic studies of H ₂ and N ₂ binding to bimetallic nickel-group 13 complexes and neutron structure of a Ni(η ² -H ₂) adduct. Chemical Science, 2019, 10, 7029-7042.	3.7	38
42	Comprehensive Thermochemistry of W-H Bonding in the Metal Hydrides CpW(CO) ₂ (IMes)H, [CpW(CO) ₂ (IMes)H] ⁺ , and [CpW(CO) ₂ (IMes)(H) ₂] ⁺ . Influence of an <i>N</i> -Heterocyclic Carbene Ligand on Metal Hydride Bond Energies. Journal of the American Chemical Society, 2011, 133, 14604-14613.	6.6	37
43	Conformational Dynamics and Proton Relay Positioning in Nickel Catalysts for Hydrogen Production and Oxidation. Organometallics, 2013, 32, 7034-7042.	1.1	36
44	Investigating the Role of the Outer-Coordination Sphere in [Ni(P ^{Ph} ₂ N ^{Ph-R} ₂) ₂] ²⁺ Hydrogenase Mimics. Inorganic Chemistry, 2012, 51, 6592-6602.	1.9	35
45	Incorporating Amino Acid Esters into Catalysts for Hydrogen Oxidation: Steric and Electronic Effects and the Role of Water as a Base. Organometallics, 2012, 31, 6719-6731.	1.1	33
46	Determination of S-H Bond Strengths in Dimolybdenum Tetrasulfide Complexes. Organometallics, 2009, 28, 749-754.	1.1	32
47	Solvent influence on the thermodynamics for hydride transfer from bis(diphosphine) complexes of nickel. Dalton Transactions, 2016, 45, 10017-10023.	1.6	24
48	Studies of Bicarbonate Binding by Dinuclear and Mononuclear Ni(II) Complexes. Inorganic Chemistry, 2005, 44, 365-373.	1.9	20
49	Electrocatalytic Oxidation of Formate with Nickel Diphosphine Dipeptide Complexes: Effect of Ligands Modified with Amino Acids. European Journal of Inorganic Chemistry, 2013, 2013, 5366-5371.	1.0	16
50	Nickel complexes of a binucleating ligand derived from an SCS pincer. Dalton Transactions, 2015, 44, 747-752.	1.6	16
51	Impact of Weak Agostic Interactions in Nickel Electrocatalysts for Hydrogen Oxidation. Organometallics, 2017, 36, 2275-2284.	1.1	16
52	Effects of Phosphine-Carbene Substitutions on the Electrochemical and Thermodynamic Properties of Nickel Complexes. Organometallics, 2014, 33, 2287-2294.	1.1	15
53	Thermochemical Insight into the Reduction of CO to CH ₃ OH with [Re(CO)] ⁺ and [Mn(CO)] ⁺ Complexes. Journal of the American Chemical Society, 2014, 136, 8661-8668.	6.6	13
54	Electrocatalytic Oxidation of Alcohol with Cobalt Triphosphine Complexes. ACS Catalysis, 2021, 11, 6384-6389.	5.5	13

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55	Formation and Reactivity of a Persistent Radical in a Dinuclear Molybdenum Complex. <i>Journal of the American Chemical Society</i> , 2008, 130, 8940-8951.	6.6	12
56	Activation of the S-H Group in Fe(μ_2 -SH)Fe Clusters: S-H Bond Strengths and Free Radical Reactivity of the Fe(μ_2 -SH)Fe Cluster. <i>Journal of the American Chemical Society</i> , 2009, 131, 15212-15224.	6.6	12
57	Controlling Proton Delivery through Catalyst Structural Dynamics. <i>Angewandte Chemie</i> , 2016, 128, 13707-13711.	1.6	12
58	Catalysis at the boundaries. <i>Nature</i> , 2014, 508, 460-461.	13.7	11
59	The H ⁺ /H [•] Redox Couple and Absolute Hydration Energy of H [•] . <i>Journal of Physical Chemistry A</i> , 2020, 124, 6084-6095.	1.1	10
60	Role of High-Spin Species and Pendant Amines in Electrocatalytic Alcohol Oxidation by a Nickel Phosphine Complex. <i>ACS Catalysis</i> , 2022, 12, 2729-2740.	5.5	6
61	Synthesis and Characterization of a Triphos Ligand Derivative and the Corresponding Pd ^{II} Complexes. <i>European Journal of Inorganic Chemistry</i> , 2015, 2015, 5781-5785.	1.0	5
62	Controlling C-H Bond Cleavage in Nickel Bis(diphosphine) Complexes: Reactivity Scope, Mechanism, and Computations. <i>Organometallics</i> , 2020, 39, 3306-3314.	1.1	5
63	Thermodynamic Trends for Reduction of CO by Molecular Complexes. <i>Organometallics</i> , 2021, 40, 2039-2050.	1.1	5
64	Computational Study of Triphosphine-Ligated Cu(I) Catalysts for Hydrogenation of CO ₂ to Formate. <i>Journal of Physical Chemistry A</i> , 2021, 125, 6600-6610.	1.1	4
65	Facile C-H Bond Cleavage Reactivity of Nickel Bis(diphosphine) Complexes. <i>Chemistry - A European Journal</i> , 2016, 22, 9493-9497.	1.7	3
66	Changing the Mechanism for CO ₂ Hydrogenation Using Solvent-Dependent Thermodynamics. <i>Angewandte Chemie</i> , 2017, 129, 15198-15201.	1.6	3
67	Designing Catalytic Systems Using Binary Solvent Mixtures: Impact of Mole Fraction of Water on Hydride Transfer. <i>Inorganic Chemistry</i> , 2021, 60, 17132-17140.	1.9	2
68	Frontispiece: Surface Immobilization of Molecular Electrocatalysts for Energy Conversion. <i>Chemistry - A European Journal</i> , 2017, 23, .	1.7	0