Cyrille Costentin

List of Publications by Year
in descending order

91 papers	10,048 citations	53794 45 h-index	43889 91 g-index
95 all docs	95 docs citations	95 times ranked	9087 citing authors

#	Article	IF	Citations
1	p-Block Metal Oxide Noninnocence in the Oxygen Evolution Reaction in Acid: The Case of Bismuth Oxide. Chemistry of Materials, 2022, 34, 826-835.	6.7	8
2	Photoinduced Catalysis of Redox Reactions. Turnover Numbers, Turnover Frequency, and Limiting Processes: Kinetic Analysis and Application to Light-Driven Hydrogen Production. ACS Catalysis, 2022, 12, 6246-6254.	11.2	6
3	Proton-coupled electron transfer of macrocyclic ring hydrogenation: The chlorinphlorin. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, e2122063119.	7.1	6
4	Homogeneous molecular catalysis of the electrochemical reduction of N₂O to N₂: redox <i>vs.</i> chemical catalysis. Chemical Science, 2021, 12, 12726-12732.	7.4	6
5	A Pioneering Career in Electrochemistry: Jean-Michel SavÃ©ant. ACS Catalysis, 2021, 11, 3224-3238.	11.2	7
6	Impactful Role of Cocatalysts on Molecular Electrocatalytic Hydrogen Production. ACS Catalysis, 2021, 11, 4561-4567.	11.2	26
7	Molecular Catalysis of Electrochemical Reactions. Overpotential and Turnover Frequency: Unidirectional and Bidirectional Systems. ACS Catalysis, 2021, 11, 5678-5687.	11.2	22
8	Effective Homogeneous Catalysis of Electrochemical Reduction of Nitrous Oxide to Dinitrogen at Rhenium Carbonyl Catalysts. ACS Catalysis, 2021, 11, 6099-6103.	11.2	12
9	In Memoriam of Jeanâ€Michel SavÃ©ant (1933â€"2020). ChemElectroChem, 2021, 8, 2752-2753.	3.4	0
10	Hydrogen Evolution Mediated by Cobalt Diimineâ€Dioxime Complexes: Insights into the Role of the Ligand Acid/Base Functionalities.. ChemElectroChem, 2021, 8, 2671-2679.	3.4	10
11	Molecular Catalysis of Electrochemical Reactions: Competition between Reduction of the Substrate and Deactivation of the Catalyst by a Cosubstrate Application to N₂O Reduction. ChemElectroChem, 2021, 8, 3740-3744.	3.4	1
12	A cobalt oxideâ€"polypyrrole nanocomposite as an efficient and stable electrode material for electrocatalytic water oxidation. Sustainable Energy and Fuels, 2021, 5, 4710-4723.	4.9	5
13	Hydrogen and proton exchange at carbon. Imbalanced transition state and mechanism crossover. Chemical Science, 2020, 11, 1006-1010.	7.4	19
14	Tertiary Amine-Assisted Electroreduction of Carbon Dioxide to Formate Catalyzed by Iron Tetraphenylporphyrin. ACS Energy Letters, 2020, 5, 72-78.	17.4	48
15	Electrochemical Energy Storage: Questioning the Popular <i>v</i>/<i>v</i>^{1/2} Scan Rate Diagnosis in Cyclic Voltammetry. Journal of Physical Chemistry Letters, 2020, 11, 9846-9849.	4.6	24
16	Driving force dependence of inner-sphere electron transfer for the reduction of CO2 on a gold electrode. Journal of Chemical Physics, 2020, 153, 094701.	3.0	11
17	Proton-Coupled Electron Transfer Catalyst: Homogeneous Catalysis. Application to the Catalysis of Electrochemical Alcohol Oxidation in Water. ACS Catalysis, 2020, 10, 6716-6725.	11.2	11
18	Electrophotocatalysis: Cyclic Voltammetry as an Analytical Tool. Journal of Physical Chemistry Letters, 2020, 11, 6097-6104.	4.6	14

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19	Proton-Coupled Electron Transfer Catalyst: Heterogeneous Catalysis. Application to an Oxygen Evolution Catalyst. ACS Catalysis, 2020, 10, 7958-7967.	11.2	8
20	Protonâ€“Electron Conductivity in Thin Films of a Cobaltâ€“Oxygen Evolving Catalyst. ACS Applied Energy Materials, 2019, 2, 3-12.	5.1	39
21	Nature of Electronic Conduction in â€œPseudocapacitiveâ€•Films: Transition from the Insulator State to Band-Conduction. ACS Applied Materials & Interfaces, 2019, 11, 28769-28773.	8.0	14
22	On the Conversion Efficiency of CO2 Electroreduction on Gold. Joule, 2019, 3, 1565-1568.	24.0	20
23	Interplay of Homogeneous Reactions, Mass Transport, and Kinetics in Determining Selectivity of the Reduction of CO₂ on Gold Electrodes. ACS Central Science, 2019, 5, 1097-1105.	11.3	97
24	Energy storage: pseudocapacitance in prospect. Chemical Science, 2019, 10, 5656-5666.	7.4	99
25	Concepts and tools for mechanism and selectivity analysis in synthetic organic electrochemistry. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 11147-11152.	7.1	61
26	Molecular approach to catalysis of electrochemical reaction in porous films. Current Opinion in Electrochemistry, 2019, 15, 58-65.	4.8	33
27	Elucidation of a Redox-Mediated Reaction Cycle for Nickel-Catalyzed Cross Coupling. Journal of the American Chemical Society, 2019, 141, 89-93.	13.7	119
28	Dual-Phase Molecular-like Charge Transport in Nanoporous Transition Metal Oxides. Journal of Physical Chemistry C, 2019, 123, 1966-1973.	3.1	20
29	Homogeneous Catalysis of Electrochemical Reactions: The Steady-State and Nonsteady-State Statuses of Intermediates. ACS Catalysis, 2018, 8, 5286-5297.	11.2	16
30	Properties of Site-Specifically Incorporated 3-Aminotyrosine in Proteins To Study Redox-Active Tyrosines: <i>Escherichia coli</i> Ribonucleotide Reductase as a Paradigm. Biochemistry, 2018, 57, 3402-3415.	2.5	12
31	Catalysis of CO₂ Electrochemical Reduction by Protonated Pyridine and Similar Molecules. Useful Lessons from a Methodological Misadventure. ACS Energy Letters, 2018, 3, 695-703.	17.4	42
32	Direct Electrochemical P(V) to P(III) Reduction of Phosphine Oxide Facilitated by Triaryl Borates. Journal of the American Chemical Society, 2018, 140, 13711-13718.	13.7	34
33	Homogeneous Molecular Catalysis of Electrochemical Reactions: Manipulating Intrinsic and Operational Factors for Catalyst Improvement. Journal of the American Chemical Society, 2018, 140, 16669-16675.	13.7	56
34	Electron Transfer at the Metal Oxide/Electrolyte Interface: A Simple Methodology for Quantitative Kinetics Evaluation. Journal of Physical Chemistry C, 2018, 122, 12761-12770.	3.1	4
35	Oxygen Reduction Reaction Promoted by Manganese Porphyrins. ACS Catalysis, 2018, 8, 8671-8679.	11.2	91
36	Ligand â€œnoninnocenceâ€•in coordination complexes vs. kinetic, mechanistic, and selectivity issues in electrochemical catalysis. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 9104-9109.	7.1	33

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37	Oxygen activation at a dicobalt centre of a dipyridylethane naphthyridine complex. Dalton Transactions, 2018, 47, 11903-11908.	3.3	9
38	Molecular catalysis of electrochemical reactions. Current Opinion in Electrochemistry, 2017, 2, 26-31.	4.8	45
39	How Do Pseudocapacitors Store Energy? Theoretical Analysis and Experimental Illustration. ACS Applied Materials & Interfaces, 2017, 9, 8649-8658.	8.0	293
40	Homogeneous Molecular Catalysis of Electrochemical Reactions: Catalyst Benchmarking and Optimization Strategies. Journal of the American Chemical Society, 2017, 139, 8245-8250.	13.7	59
41	Evidencing Fast, Massive, and Reversible H⁺ Insertion in Nanostructured TiO₂ Electrodes at Neutral pH. Where Do Protons Come From?. Journal of Physical Chemistry C, 2017, 121, 10325-10335.	3.1	48
42	Cyclic voltammetry modeling of proton transport effects on redox charge storage in conductive materials: application to a TiO₂ mesoporous film. Physical Chemistry Chemical Physics, 2017, 19, 17944-17951.	2.8	18
43	Catalysis of Electrochemical Reactions by Surface-Active Sites: Analyzing the Occurrence and Significance of Volcano Plots by Cyclic Voltammetry. ACS Catalysis, 2017, 7, 4876-4880.	11.2	20
44	Heterogeneous Molecular Catalysis of Electrochemical Reactions: Volcano Plots and Catalytic Tafel Plots. ACS Applied Materials & Interfaces, 2017, 9, 19894-19899.	8.0	14
45	Towards an intelligent design of molecular electrocatalysts. Nature Reviews Chemistry, 2017, 1, .	30.2	153
46	Multielectron, multisubstrate molecular catalysis of electrochemical reactions: Formal kinetic analysis in the total catalysis regime. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 11303-11308.	7.1	24
47	Catalysis and Inhibition in the Electrochemical Reduction of CO₂ on Platinum in the Presence of Protonated Pyridine. New Insights into Mechanisms and Products. Journal of the American Chemical Society, 2017, 139, 13922-13928.	13.7	33
48	Self-healing catalysis in water. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 13380-13384.	7.1	95
49	Investigating Charge Transfer in Functionalized Mesoporous EISAâ€“SnO₂ Films. Journal of Physical Chemistry C, 2017, 121, 23207-23217.	3.1	1
50	Efficient electrolyzer for CO ₂ splitting in neutral water using earth-abundant materials. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 5526-5529.	7.1	105
51	Conductive Mesoporous Catalytic Films. Current Distortion and Performance Degradation by Dual-Phase Ohmic Drop Effects. Analysis and Remedies. Journal of Physical Chemistry C, 2016, 120, 21263-21271.	3.1	19
52	Dissection of Electronic Substituent Effects in Multielectronâ€“Multistep Molecular Catalysis. Electrochemical CO₂-to-CO Conversion Catalyzed by Iron Porphyrins. Journal of Physical Chemistry C, 2016, 120, 28951-28960.	3.1	139
53	Through-Space Charge Interaction Substituent Effects in Molecular Catalysis Leading to the Design of the Most Efficient Catalyst of CO₂-to-CO Electrochemical Conversion. Journal of the American Chemical Society, 2016, 138, 16639-16644.	13.7	482
54	Conduction and Reactivity in Heterogeneous-Molecular Catalysis: New Insights in Water Oxidation Catalysis by Phosphate Cobalt Oxide Films. Journal of the American Chemical Society, 2016, 138, 5615-5622.	13.7	100

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55	Cyclic Voltammetry of Electrocatalytic Films: Fast Catalysis Regimes. ChemElectroChem, 2015, 2, 1774-1784.	3.4	25
56	Efficient and selective molecular catalyst for the CO ₂ -to-CO electrochemical conversion in water. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 6882-6886.	7.1	278
57	Benchmarking of Homogeneous Electrocatalysts: Overpotential, Turnover Frequency, Limiting Turnover Number. Journal of the American Chemical Society, 2015, 137, 5461-5467.	13.7	141
58	Cyclic voltammetry of fast conducting electrocatalytic films. Physical Chemistry Chemical Physics, 2015, 17, 19350-19359.	2.8	16
59	Cyclic Voltammetry Analysis of Electrocatalytic Films. Journal of Physical Chemistry C, 2015, 119, 12174-12182.	3.1	41
60	Molecular Catalysis of O₂ Reduction by Iron Porphyrins in Water: Heterogeneous versus Homogeneous Pathways. Journal of the American Chemical Society, 2015, 137, 13535-13544.	13.7	97
61	Unraveling the charge transfer/electron transport in mesoporous semiconductive TiO₂ films by voltabsorptometry. Physical Chemistry Chemical Physics, 2015, 17, 10592-10607.	2.8	21
62	Current Issues in Molecular Catalysis Illustrated by Iron Porphyrins as Catalysts of the CO₂-to-CO Electrochemical Conversion. Accounts of Chemical Research, 2015, 48, 2996-3006.	15.6	279
63	Breaking Bonds with Electrons and Protons. Models and Examples. Accounts of Chemical Research, 2014, 47, 271-280.	15.6	47
64	Pendant Acidâ€"Base Groups in Molecular Catalysts: H-Bond Promoters or Proton Relays? Mechanisms of the Conversion of CO₂ to CO by Electrogenerated Iron(0)Porphyrins Bearing Prepositioned Phenol Functionalities. Journal of the American Chemical Society, 2014, 136, 11821-11829.	13.7	209
65	Molecular Catalysis of H₂ Evolution: Diagnosing Heterolytic versus Homolytic Pathways. Journal of the American Chemical Society, 2014, 136, 13727-13734.	13.7	87
66	Ultraefficient homogeneous catalyst for the CO ₂ -to-CO electrochemical conversion. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 14990-14994.	7.1	236
67	Multielectron, Multistep Molecular Catalysis of Electrochemical Reactions: Benchmarking of Homogeneous Catalysts. ChemElectroChem, 2014, 1, 1226-1236.	3.4	345
68	Electrochemistry of Acids on Platinum. Application to the Reduction of Carbon Dioxide in the Presence of Pyridinium Ion in Water. Journal of the American Chemical Society, 2013, 135, 17671-17674.	13.7	87
69	Catalysis of the electrochemical reduction of carbon dioxide. Chemical Society Reviews, 2013, 42, 2423-2436.	38.1	1,382
70	Proton-Coupled Electron Transfer Cleavage of Heavy-Atom Bonds in Electrocatalytic Processes. Cleavage of a Câ€"O Bond in the Catalyzed Electrochemical Reduction of CO₂. Journal of the American Chemical Society, 2013, 135, 9023-9031.	13.7	209
71	Protonâ€"Electron Transport and Transfer in Electrocatalytic Films. Application to a Cobalt-Based O2-Evolution Catalyst. Journal of the American Chemical Society, 2013, 135, 10492-10502.	13.7	151
72	Boron-Capped Tris(glyoximato) Cobalt Clathrochelate as a Precursor for the Electrodeposition of Nanoparticles Catalyzing H₂ Evolution in Water. Journal of the American Chemical Society, 2012, 134, 6104-6107.	13.7	169

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73	Turnover Numbers, Turnover Frequencies, and Overpotential in Molecular Catalysis of Electrochemical Reactions. Cyclic Voltammetry and Preparative-Scale Electrolysis. Journal of the American Chemical Society, 2012, 134, 11235-11242.	13.7	647
74	A Local Proton Source Enhances CO ₂ Electroreduction to CO by a Molecular Fe Catalyst. Science, 2012, 338, 90-94.	12.6	1,075
75	Concerted Protonâ€"Electron Transfers. Consistency between Electrochemical Kinetics and their Homogeneous Counterparts.. Journal of the American Chemical Society, 2011, 133, 19160-19167.	13.7	30
76	Water (in Water) as an Intrinsically Efficient Proton Acceptor in Concerted Proton Electron Transfers. Journal of the American Chemical Society, 2011, 133, 6668-6674.	13.7	65
77	Concerted heavy-atom bond cleavage and proton and electron transfers illustrated by proton-assisted reductive cleavage of an Oâ€"O bond. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 8559-8564.	7.1	35
78	Concerted Protonâ˘'Electron Transfers: Electrochemical and Related Approaches. Accounts of Chemical Research, 2010, 43, 1019-1029.	15.6	240
79	Intrinsic reactivity and driving force dependence in concerted protonâ€"electron transfers to water illustrated by phenol oxidation. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 3367-3372.	7.1	71
80	The electrochemical approach to concerted protonâ€"electron transfers in the oxidation of phenols in water. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 18143-18148.	7.1	112
81	Concerted proton-coupled electron transfers in aquo/hydroxo/oxo metal complexes: Electrochemistry of [Os ^{II} (bpy) ₂ py(OH ₂)] ²⁺ in water. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 11829-11836.	7.1	61
82	Electrochemical Approach to the Mechanistic Study of Proton-Coupled Electron Transfer. Chemical Reviews, 2008, 108, 2145-2179.	47.7	376
83	Adiabatic and Non-adiabatic Concerted Protonâ˘'Electron Transfers. Temperature Effects in the Oxidation of Intramolecularly Hydrogen-Bonded Phenols. Journal of the American Chemical Society, 2007, 129, 9953-9963.	13.7	98
84	Concerted Protonâ˘'Electron Transfer Reactions in Water. Are the Driving Force and Rate Constant Depending on pH When Water Acts as Proton Donor or Acceptor?. Journal of the American Chemical Society, 2007, 129, 5870-5879.	13.7	104
85	Electron transfer and bond breaking: Recent advances. Chemical Physics, 2006, 324, 40-56.	1.9	108
86	Electrochemical concerted proton and electron transfers. Potential-dependent rate constant, reorganization factors, proton tunneling and isotope effects. Journal of Electroanalytical Chemistry, 2006, 588, 197-206.	3.8	87
87	Role of Protonation and of Axial Ligands in the Reductive Dechlorination of Alkyl Chlorides by Vitamin B12 Complexes. Reductive Cleavage of Chloroacetonitrile by Co(I) Cobalamins and Cobinamides. Journal of the American Chemical Society, 2005, 127, 5049-5055.	13.7	52
88	Fragmentation of Aryl Halide Ï€ Anion Radicals. Bending of the Cleaving Bond and Activation vs Driving Force Relationships. Journal of the American Chemical Society, 2004, 126, 16051-16057.	13.7	153
89	Why Are Proton Transfers at Carbon Slow? Self-Exchange Reactions. Journal of the American Chemical Society, 2004, 126, 14787-14795.	13.7	25
90	Stepwise and Concerted Pathways in Thermal and Photoinduced Electron-Transfer/Bond-Breaking Reactions. Journal of Physical Chemistry A, 2000, 104, 7492-7501.	2.5	25

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91	â€œThermalâ€•SRN1 Reactions:â€‰ How Do They Work? Novel Evidence that the Driving Force Controls the Transition between Stepwise and Concerted Mechanisms in Dissociative Electron Transfers. Journal of the American Chemical Society, 1999, 121, 4451-4460.	13.7	73