JosÃ© H Zagal

List of Publications by Year
in descending order

101 papers	5,208 citations	81900 39 h-index	88630 70 g-index
102 all docs	102 docs citations	102 times ranked	3793 citing authors

#	Article	IF	Citations
1	Metallophthalocyanines as catalysts in electrochemical reactions. Coordination Chemistry Reviews, 1992, 119, 89-136.	18.8	516
2	Metallophthalocyanine-based molecular materials as catalysts for electrochemical reactions. Coordination Chemistry Reviews, 2010, 254, 2755-2791.	18.8	502
3	Reactivity Descriptors for the Activity of Molecular MN4 Catalysts for the Oxygen Reduction Reaction. Angewandte Chemie - International Edition, 2016, 55, 14510-14521.	13.8	463
4	Linear versus volcano correlations between electrocatalytic activity and redox and electronic properties of metallophthalocyanines. Electrochimica Acta, 1998, 44, 1349-1357.	5.2	147
5	Oxygen reduction reaction usingN₄-metallomacrocyclic catalysts: fundamentals on rational catalyst design. Journal of Porphyrins and Phthalocyanines, 2012, 16, 761-784.	0.8	132
6	Electro-oxidation of 2-mercaptoethanol on adsorbed monomeric and electropolymerized cobalt tetra-aminophthalocyanine films. Effect of film thickness. Journal of Electroanalytical Chemistry, 2001, 497, 75-83.	3.8	127
7	Carbon Nanotubes, Phthalocyanines and Porphyrins: Attractive Hybrid Materials for Electrocatalysis and Electroanalysis. Journal of Nanoscience and Nanotechnology, 2009, 9, 2201-2214.	0.9	122
8	Tuning the redox properties of metalloporphyrin- and metallophthalocyanine-based molecular electrodes for the highest electrocatalytic activity in the oxidation of thiols. Physical Chemistry Chemical Physics, 2007, 9, 3383.	2.8	120
9	Does CO poison Fe-based catalysts for ORR?. Electrochemistry Communications, 2010, 12, 628-631.	4.7	119
10	Electroreduction of nitrite by hemin, myoglobin and hemoglobin in surfactant films. Journal of Electroanalytical Chemistry, 2001, 497, 106-113.	3.8	98
11	Electrocatalytic activity of cobalt phthalocyanine CoPc adsorbed on a graphite electrode for the oxidation of reduced l-glutathione (GSH) and the reduction of its disulfide (GSSG) at physiological pH. Bioelectrochemistry, 2007, 70, 147-154.	4.6	84
12	Comparative study of electropolymerized cobalt porphyrin and phthalocyanine based films for the electrochemical activation of thiols. Journal of Materials Chemistry, 2002, 12, 225-232.	6.7	81
13	Electrochemistry of cysteine and cystine on metal-phthalocyanines adsorbed on a graphite electrode. Electrochimica Acta, 1985, 30, 449-454.	5.2	80
14	Biomimetic reduction of O₂in an acid medium on iron phthalocyanines axially coordinated to pyridine anchored on carbon nanotubes. Journal of Materials Chemistry A, 2017, 5, 12054-12059.	10.3	76
15	Reactivity of immobilized cobalt phthalocyanines for the electroreduction of molecular oxygen in terms of molecular hardness. Journal of Electroanalytical Chemistry, 2000, 489, 96-100.	3.8	72
16	Enhancement of the Catalytic Activity of Fe Phthalocyanine for the Reduction of O₂ Anchored to Au(111) via Conjugated Self-Assembled Monolayers of Aromatic Thiols As Compared to Cu Phthalocyanine. Journal of Physical Chemistry C, 2012, 116, 15329-15341.	3.1	69
17	Donorâ€“acceptor intermolecular hardness on charge transfer reactions of substituted cobalt phthalocyanines. Journal of Electroanalytical Chemistry, 2001, 497, 55-60.	3.8	64
18	Glassy carbon electrodes modified with single walled carbon nanotubes and cobalt phthalocyanine and nickel tetrasulfonated phthalocyanine: Highly stable new hybrids with enhanced electrocatalytic performances. Electrochemistry Communications, 2007, 9, 1629-1634.	4.7	64

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19	Trends in reactivity of unsubstituted and substituted cobalt-phthalocyanines for the electrocatalysis of glucose oxidation. Journal of Electroanalytical Chemistry, 2006, 589, 212-218.	3.8	62
20	Towards a unified way of comparing the electrocatalytic activity MN4 macrocyclic metal catalysts for O2 reduction on the basis of the reversible potential of the reaction. Electrochemistry Communications, 2014, 41, 24-26.	4.7	62
21	Synthesis and electrocatalytic properties of octaalkoxycobalt phthalocyanine for the oxidation of 2-mercaptoethanol. Journal of Porphyrins and Phthalocyanines, 1999, 03, 355-363.	0.8	61
22	A mechanistic study of the electro-oxidation of hydrazine on phthalocyanines of VO, Cr, Mn, Ni, Cu and Zn attached to graphite electrodes. Journal of Electroanalytical Chemistry and Interfacial Electrochemistry, 1986, 210, 95-110.	0.1	60
23	Metal-centered redox chemistry of substituted cobalt phthalocyanines adsorbed on graphite and correlations with MO calculations and Hammett parameters. Electrocatalytic reduction of a disulfide. Polyhedron, 2000, 19, 2255-2260.	2.2	60
24	Volcano correlations between formal potential and Hammett parameters of substituted cobalt phthalocyanines and their activity for hydrazine electro-oxidation. Electrochemistry Communications, 2002, 4, 182-187.	4.7	60
25	Paradoxical effect of the redox potential of adsorbed metallophthalocyanines on their activity for the oxidation of 2-mercaptoethanol. Inner versus outer sphere electrocatalysis. Electrochemistry Communications, 1999, 1, 389-393.	4.7	58
26	Building Pyridinium Molecular Wires as Axial Ligands for Tuning the Electrocatalytic Activity of Iron Phthalocyanines for the Oxygen Reduction Reaction. ACS Catalysis, 2018, 8, 8406-8419.	11.2	57
27	Biomimicking vitamin B12. A Co phthalocyanine pyridine axial ligand coordinated catalyst for the oxygen reduction reaction. Electrochimica Acta, 2018, 265, 547-555.	5.2	56
28	Electrocatalysis of oxidation of 2-mercaptoethanol, l-cysteine and reduced glutathione by adsorbed and electrodeposited cobalt tetra phenoxypyrrole and tetra ethoxythiophene substituted phthalocyanines. Electrochimica Acta, 2006, 51, 5125-5130.	5.2	54
29	Catalytic electrooxidation of 2-mercaptoethanol on a graphite electrode modified with metalâ€”phthalocyanines. Electrochimica Acta, 1989, 34, 243-247.	5.2	52
30	In search of the most active MN4 catalyst for the oxygen reduction reaction. The case of perfluorinated Fe phthalocyanine. Journal of Materials Chemistry A, 2019, 7, 24776-24783.	10.3	52
31	Electrocatalysis of hydrazine electrooxidation by phthalocyamines adsorbed on graphite. Journal of Electroanalytical Chemistry and Interfacial Electrochemistry, 1980, 109, 389-393.	0.1	51
32	Elucidating the mechanism of the oxygen reduction reaction for pyrolyzed Fe-N-C catalysts in basic media. Electrochemistry Communications, 2019, 102, 78-82.	4.7	51
33	Electrocatalytic oxygen reduction reaction on iron phthalocyanine-modified carbide-derived carbon/carbon nanotube composite electrocatalysts. Electrochimica Acta, 2020, 334, 135575.	5.2	50
34	Reversibility of the l-cysteine/l-cystine redox process at physiological pH on graphite electrodes modified with coenzyme B12 and vitamin B12. Electrochimica Acta, 2002, 48, 323-329.	5.2	49
35	Non-linear correlations between formal potential and Hammett parameters of substituted iron phthalocyanines and catalytic activity for the electro-oxidation of hydrazine. Journal of Solid State Electrochemistry, 2003, 7, 626-631.	2.5	47
36	Comparison of the catalytic activity for O₂reduction of Fe and Co MN4 adsorbed on graphite electrodes and on carbon nanotubes. Physical Chemistry Chemical Physics, 2017, 19, 20441-20450.	2.8	45

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37	Electrocatalytic oxygen reduction on transition metal macrocyclic complexes for anion exchange membrane fuel cell application. Current Opinion in Electrochemistry, 2018, 9, 207-213.	4.8	44
38	Catalytic Electrooxidation of 2-Mercaptoethanol on Perchlorinated Iron Phthalocyanine Adsorbed on a Graphite Electrode. Electroanalysis, 1998, 10, 571-575.	2.9	43
39	Experimental reactivity descriptors of M-N-C catalysts for the oxygen reduction reaction. Electrochimica Acta, 2020, 332, 135340.	5.2	42
40	Carbon nanotubes and metalloporphyrins and metallophthalocyanines-based materials for electroanalysis. Journal of Porphyrins and Phthalocyanines, 2012, 16, 713-740.	0.8	41
41	ReaktivitÃtsdeskriptoren fÃ¼r die AktivitÃt von molekularen MN4â€Katalysatoren zur Sauerstoffreduktion. Angewandte Chemie, 2016, 128, 14726-14738.	2.0	39
42	Oxygen Reduction Reaction at Penta-Coordinated Co Phthalocyanines. Frontiers in Chemistry, 2020, 8, 22.	3.6	37
43	Electrocatalytic oxidation of hydrazine in alkaline media promoted by iron tetrapyridinoporphyrazine adsorbed on graphite surface. Journal of the Brazilian Chemical Society, 2008, 19, 720-726.	0.6	36
44	Transition metal phthalocyanine-modified shungite-based cathode catalysts for alkaline membrane fuel cell. International Journal of Hydrogen Energy, 2021, 46, 4365-4377.	7.1	36
45	Mapping transition metal-MN4 macrocyclic complex catalysts performance for the critical reactivity descriptors. Current Opinion in Electrochemistry, 2021, 27, 100683.	4.8	36
46	Electrocatalysis of 2-mercaptoethanesulfonic acid oxidation on cobalt phthalocyanine modified electrodes. Effect of surface concentration of the catalyst. Electrochimica Acta, 2001, 46, 3397-3404.	5.2	35
47	Electroreduction of oxygen in alkaline solution on iron phthalocyanine modified carbide-derived carbons. Electrochimica Acta, 2019, 299, 999-1010.	5.2	34
48	Mapping transition metalâ€"nitrogenâ€"carbon catalystÂperformance on the critical descriptorÂdiagram. Current Opinion in Electrochemistry, 2021, 27, 100687.	4.8	34
49	Tuning the redox properties of Co-N4 macrocyclic complexes for the catalytic electrooxidation of glucose. Electrochimica Acta, 2008, 53, 4883-4888.	5.2	33
50	Enhanced catalytic activity of Fe phthalocyanines linked to Au(111) via conjugated self-assembled monolayers of aromatic thiols for O2 reduction. Electrochemistry Communications, 2011, 13, 1182-1185.	4.7	32
51	Inverted correlations between rate constants and redox potential of the catalyst for the electrooxidation of 2-aminoethanethiol mediated by surface confined substituted cobalt-phthalocyanines. Journal of Electroanalytical Chemistry, 2005, 580, 50-56.	3.8	30
52	Linear versus volcano correlations for the electrocatalytic oxidation of hydrazine on graphite electrodes modified with MN4 macrocyclic complexes. Electrochimica Acta, 2014, 140, 314-319.	5.2	30
53	Effect of film thickness on the electro-reduction of molecular oxygen on electropolymerized cobalt tetra-aminophthalocyanine films. Journal of Solid State Electrochemistry, 2005, 9, 21-29.	2.5	29
54	Optimization of the electrocatalytic activity of MN4-macrocyclics adsorbed on graphite electrodes for the electrochemical oxidation of L-cysteine by tuning the M (II)/(I) formal potential of the catalyst: an overview. Electrochimica Acta, 2014, 140, 482-488.	5.2	29

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55	Fundamental Aspects on the Catalytic Activity of Metallomacrocyclics for the Electrochemical Reduction of O2. , 2006, , 41-82.		27
56	Insights into the electronic structure of Fe penta-coordinated complexes. Spectroscopic examination and electrochemical analysis for the oxygen reduction and oxygen evolution reactions. Journal of Materials Chemistry A, 2021, 9, 23802-23816.	10.3	27
57	Enhancing the electrocatalytic activity of Fe phthalocyanines for the oxygen reduction reaction by the presence of axial ligands: Pyridine-functionalized single-walled carbon nanotubes. Electrochimica Acta, 2021, 398, 139263.	5.2	27
58	Electroreduction of O2 catalyzed by vitamin B12 adsorbed on a graphite electrode. Journal of Electroanalytical Chemistry and Interfacial Electrochemistry, 1987, 237, 145-148.	0.1	26
59	O2 reduction on electrodes modified with nitrogen doped carbon nanotubes synthesized with different metal catalysts. Diamond and Related Materials, 2016, 64, 119-129.	3.9	22
60	Probing the Fen+/Fe(nâˆ'1)+ redox potential of Fe phthalocyanines and Fe porphyrins as a reactivity descriptor in the electrochemical oxidation of cysteamine. Journal of Electroanalytical Chemistry, 2018, 819, 502-510.	3.8	22
61	Penta-coordinated transition metal macrocycles as electrocatalysts for the oxygen reduction reaction. Journal of Solid State Electrochemistry, 2021, 25, 15-31.	2.5	22
62	Theoretical and Experimental Study of Bonding and Optical Properties of Self-Assembly Metallophthalocyanines Complexes on a Gold Surface. A Survey of the Substrateâ€"Surface Interaction.. Journal of Physical Chemistry C, 2011, 115, 23512-23518.	3.1	21
63	Electroreduction of oxygen on mixtures of phthalocyanines co-adsorbed on a graphite electrode. Journal of Electroanalytical Chemistry and Interfacial Electrochemistry, 1984, 181, 295-300.	0.1	20
64	Overoxidized Polypyrrole/Cobalt Tetrasulfonated Phthalocyanine Modified Ultramicro-Carbon-Fiber Electrodes for the Electrooxidation of 2-Mercaptoethanol. Electroanalysis, 2001, 13, 1136-1139.	2.9	20
65	Electrocatalytic actvity of modified gold electrodes based on self-assembled monolayers of 4-mercaptopyridine and 4-aminothiophenol on Au(111) surfaces chemically functionalized with substituted and unsubstituted iron phthalocyanines. Electrochimica Acta, 2013, 114, 7-13.	5.2	20
66	Optimizing the reactivity of surface confined cobalt N4-macrocyclics for the electrocatalytic oxidation of l-cysteine by tuning the Co(II)/(I) formal potential of the catalyst. Electrochimica Acta, 2014, 126, 37-41.	5.2	20
67	Influence of cyano substituents on the electron density and catalytic activity towards the oxygen reduction reaction for iron phthalocyanine. The case for Fe(II) 2,3,9,10,16,17,23,24-octa(cyano)phthalocyanine. Electrochemistry Communications, 2020, 118, 106784.	4.7	20
68	Theoretical study of the interaction energy profile of cobalt phthalocyanine and 2-mercaptoethanol. Effect of the graphite on the global reactivity. Computational and Theoretical Chemistry, 2002, 580, 193-200.	1.5	19
69	Building Nanoscale Molecular Wires Exploiting Electrocatalytic Interactions. Electrochimica Acta, 2015, 179, 611-617.	5.2	19
70	Theoretical Modeling of the Oxidation of Hydrazine by Iron(II) Phthalocyanine in the Gas Phase. Influence of the Metal Character. Journal of Physical Chemistry A, 2006, 110, 11870-11875.	2.5	18
71	Volcano correlations for the reactivity of surface-confined cobalt N4-macrocyclics for the electrocatalytic oxidation of 2-mercaptoacetate. Journal of Solid State Electrochemistry, 2008, 12, 473-481.	2.5	18
72	Multiscale Approach to the Study of the Electronic Properties of Two Thiophene Curcuminoid Molecules. Chemistry - A European Journal, 2016, 22, 12808-12818.	3.3	18

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73	Reactivity indexes for the electrocatalytic oxidation of hydrogen peroxide promoted by several ligand-substituted and unsubstituted Co phthalocyanines adsorbed on graphite. Journal of Electroanalytical Chemistry, 2016, 765, 22-29.	3.8	18
74	Theoretical and Experimental Reactivity Predictors for the Electrocatalytic Activity of Copper Phenanthroline Derivatives for the Reduction of Dioxygen. Journal of Physical Chemistry C, 2019, 123, 19468-19478.	3.1	18
75	Reactivity trends of surface-confined Co-tetraphenyl porphyrins and vitamin B12 for the oxidation of 2-aminoethanethiol: Comparison with Co-phthalocyanines and oxidation of other thiols. Journal of Electroanalytical Chemistry, 2010, 639, 88-94.	3.8	17
76	Theoretical study of the electron transfer reaction of hydrazine with cobalt(II) phthalocyanine and substituted cobalt(II) phthalocyanines. Journal of Coordination Chemistry, 2003, 56, 1269-1275.	2.2	16
77	Environment effects on the oxidation of thiols: cobalt phthalocyanine as a test case. Chemical Physics Letters, 2003, 376, 690-697.	2.6	15
78	In Search of the Best Iron N4-Macrocyclic Catalysts Adsorbed on Graphite Electrodes and on Multi-walled Carbon Nanotubes for the Oxidation of l-Cysteine by Adjusting the Fe(II)/(I) Formal Potential of the Complex. Electrocatalysis, 2014, 5, 426-437.	3.0	15
79	Preparation and Characterization of Electrodes Modified with Pyrrole Surfactant, Multiwalled Carbon Nanotubes and Metallophthalocyanines for the Electrochemical Detection of Thiols. Electroanalysis, 2014, 26, 507-512.	2.9	14
80	Molecular conductance versus inductive effects of axial ligands on the electrocatalytic activity of self-assembled iron phthalocyanines: The oxygen reduction reaction. Electrochimica Acta, 2019, 327, 134996.	5.2	14
81	Surface on Surface. Survey of the Monolayer Goldâ€“Graphene Interaction from Au₁₂ and PAH via Relativistic DFT Calculations. Journal of Physical Chemistry C, 2016, 120, 7358-7364.	3.1	12
82	Activity volcano plots for the oxygen reduction reaction using FeN4 complexes: From reported experimental data to the electrochemical meaning. Current Opinion in Electrochemistry, 2022, 32, 100923.	4.8	12
83	Solvent Effect on Density Functional Reactivity Indexes Applied to Substituted Nickel Phthalocyanines. Journal of Physical Chemistry A, 2004, 108, 6045-6051.	2.5	11
84	Stripping voltammetry microprobe (SPV): Substantial improvements of the protocol. Journal of Electroanalytical Chemistry, 2015, 745, 61-65.	3.8	11
85	Oxygen Electroreduction on Zinc and Dilithium Phthalocyanine Modified Multiwalled Carbon Nanotubes in Alkaline Media. Journal of the Electrochemical Society, 2017, 164, H338-H344.	2.9	11
86	Reactivity descriptors for Cu bis-phenanthroline catalysts for the hydrogen peroxide reduction reaction. Electrochimica Acta, 2020, 357, 136881.	5.2	9
87	Tuning the Formal Potential of Metallomacrocyclics for Maximum Catalytic Activity For the Oxidation of Thiols and Hydrazine. ECS Transactions, 2009, 19, 97-112.	0.5	8
88	Preparation, spectroscopic, and electrochemical characterization of metal(II) complexes with Schiff base ligands derived from chitosan: correlations of redox potentials with Hammett parameters. Journal of Coordination Chemistry, 2014, 67, 4114-4124.	2.2	8
89	Reactivity descriptors for iron porphyrins and iron phthalocyanines as catalysts for the electrooxidation of reduced glutathione. Journal of Solid State Electrochemistry, 2016, 20, 3199-3208.	2.5	8
90	Fundamental Studies on the Electrocatalytic Properties of Metal Macrocyclics and Other Complexes for the Electroreduction of O2. Lecture Notes in Energy, 2013, , 157-212.	0.3	7

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91	Fe₃O₄ Templated Pyrolyzed Feâ^'Nâ^'C Catalysts. Understanding the role of Nâ€Functions and Fe₃C on the ORR Activity and Mechanism. ChemElectroChem, 2022, 9, .	3.4	6
92	Strategies to improve the catalytic activity and stability of bioinspired Cu molecular catalysts for the ORR. Current Opinion in Electrochemistry, 2022, 35, 101035.	4.8	6
93	Mapping experimental and theoretical reactivity descriptors of fe macrocyclic complexes deposited on graphite or on multi walled carbon nanotubes for the oxidation of thiols: Thioglycolic acid oxidation. Electrochimica Acta, 2021, 391, 138905.	5.2	5
94	Optical Determination of Differential Coverageâ^'Potential Relations of Redox-Active Species Immobilized on Electrode Surfaces. Analytical Chemistry, 2005, 77, 6942-6946.	6.5	4
95	Inverted Linear Correlation Between the Catalytic Activity of Iron Phthalocyanines and the Formal Potential of the Catalyst in the Electrooxidation of l-Cysteine. Electrocatalysis, 2012, 3, 153-159.	3.0	4
96	Polyaniline nanostructure electrode: morphological control by a hybrid template. Journal of Solid State Electrochemistry, 2016, 20, 1175-1180.	2.5	3
97	Optimizing the Electrocatalytic Activity of Surface Confined Co Macrocyclics for the Electrooxidation of Thiocyanate at pHâ€...4. Electroanalysis, 2011, 23, 711-718.	2.9	2
98	Tailoring electroactive surfaces by non-template molecular assembly. Towards electrooxidation of L-cysteine. Electrochimica Acta, 2017, 254, 201-213.	5.2	2
99	Effect of pH on the Electrochemical Behavior of Hydrogen Peroxide in the Presence of Pseudomonas aeruginosa. Frontiers in Bioengineering and Biotechnology, 2021, 9, 749057.	4.1	2
100	Modified Electrodes with MN4 Complexes: Conception and Electroanalytical Performances for the Detection of Thiols. , 2016, , 277-321.		0
101	Redox Potentials as Reactivity Descriptors in Electrochemistry. , 2020, , .		0