David A Harrington

List of Publications by Year
in descending order

114 papers	4,141 citations	126907 33 h-index	118850 62 g-index
117 all docs	117 docs citations	117 times ranked	3624 citing authors

#	Article	IF	Citations
1	ac Impedance of Faradaic reactions involving electrosorbed intermediatesâ€"I. Kinetic theory. Electrochimica Acta, 1987, 32, 1703-1712.	5.2	458
2	A Microfluidic Fuel Cell with Flow-Through Porous Electrodes. Journal of the American Chemical Society, 2008, 130, 4000-4006.	13.7	301
3	Detection of Membrane Drying, Fuel Cell Flooding, and Anode Catalyst Poisoning on PEMFC Stacks by Electrochemical Impedance Spectroscopy. Journal of the Electrochemical Society, 2006, 153, A857.	2.9	234
4	Behavior of overpotentialâ€"deposited species in Faradaic reactionsâ€"II. ac Impedance measurements on H2 evolution kinetics at activated and unactivated Pt cathodes. Electrochimica Acta, 1987, 32, 1713-1731.	5.2	217
5	Mechanism and equivalent circuits in electrochemical impedance spectroscopy. Electrochimica Acta, 2011, 56, 8005-8013.	5.2	180
6	Characterisation of proton exchange membrane fuel cell (PEMFC) failures via electrochemical impedance spectroscopy. Journal of Power Sources, 2006, 161, 264-274.	7.8	141
7	High-performance microfluidic vanadium redox fuel cell. Electrochimica Acta, 2007, 52, 4942-4946.	5.2	127
8	Hydrogen Peroxide as an Oxidant for Microfluidic Fuel Cells. Journal of the Electrochemical Society, 2007, 154, B1220.	2.9	115
9	Impedance study of methanol oxidation on platinum electrodes. Electrochimica Acta, 2006, 51, 3827-3840.	5.2	114
10	An alkaline microfluidic fuel cell based on formate and hypochlorite bleach. Electrochimica Acta, 2008, 54, 698-705.	5.2	108
11	Kinetic theory of the open-circuit potential decay method for evaluation of behaviour of adsorbed intermediates. Journal of Electroanalytical Chemistry and Interfacial Electrochemistry, 1987, 221, 1-21.	0.1	98
12	Powerful Insight into Catalytic Mechanisms through Simultaneous Monitoring of Reactants, Products, and Intermediates. Angewandte Chemie - International Edition, 2011, 50, 8304-8306.	13.8	96
13	Structure dependency of the atomic-scale mechanisms of platinum electro-oxidation and dissolution. Nature Catalysis, 2020, 3, 754-761.	34.4	72
14	Initial stages of Pt(111) electrooxidation: dynamic and structural studies by surface X-ray diffraction. Electrochimica Acta, 2017, 224, 220-227.	5.2	71
15	Surface phases of Ni(110) induced by adsorption of deuterium. Surface Science, 1987, 179, 297-321.	1.9	70
16	Structural Reorganization of Pt(111) Electrodes by Electrochemical Oxidation and Reduction. Journal of the American Chemical Society, 2017, 139, 4532-4539.	13.7	70
17	Simulation of anodic Pt oxide growth. Journal of Electroanalytical Chemistry, 1997, 420, 101-109.	3.8	69
18	An Overview of Glycerol Electrooxidation Mechanisms on Pt, Pd and Au. ChemSusChem, 2021, 14, 1472-1495.	6.8	63

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19	The adsorption of water on Ni(110): Monolayer, bilayer and related phenomena. Surface Science, 1990, 230, 159-174.	1.9	61
20	Strategic enzyme patterning for microfluidic biofuel cells. Journal of Power Sources, 2006, 158, 1-12.	7.8	59
21	Effects of mass transfer on the electrocatalytic CO 2 reduction on Cu. Electrochimica Acta, 2017, 238, 56-63.	5.2	59
22	The interaction of hydrogen with a Pd(100) surface. Surface Science, 1988, 198, 413-430.	1.9	56
23	Impedance study of formic acid oxidation on platinum electrodes. Electrochimica Acta, 2008, 53, 6851-6864.	5.2	55
24	In situ scanning tunneling microscopy of bismuth electrodeposition on Au() surfaces. Surface Science, 2002, 512, L367-L372.	1.9	53
25	Platinum oxide growth kinetics for cyclic voltammetry. Journal of Electroanalytical Chemistry, 1992, 335, 19-31.	3.8	49
26	An ac voltammetry study of Pt oxide growth. Journal of Electroanalytical Chemistry, 1997, 420, 89-100.	3.8	47
27	Uncovering the nature of electroactive sites in nano architectured dendritic Bi for highly efficient CO2 electroreduction to formate. Applied Catalysis B: Environmental, 2020, 274, 119031.	20.2	46
28	Dynamic electrochemical impedance spectroscopy, for electrocatalytic reactions. Electrochimica Acta, 2014, 131, 13-19.	5.2	42
29	Stability and electrochemical impedance of mechanisms with a single adsorbed species. Journal of Electroanalytical Chemistry, 2001, 501, 222-234.	3.8	39
30	Integrated electrochemical velocimetry for microfluidic devices. Microfluidics and Nanofluidics, 2007, 3, 403-416.	2.2	36
31	Impedance study of membrane dehydration and compression in proton exchange membrane fuel cells. Journal of Power Sources, 2009, 192, 457-466.	7.8	35
32	A potentiostatic double-step method for measuring hydrogen atom diffusion and trapping in metal electrodesâ€"I. Theory. Acta Metallurgica, 1987, 35, 253-262.	2.1	33
33	Dynamic electrochemical impedance study of methanol oxidation at Pt at elevated temperatures. Electrochimica Acta, 2019, 295, 139-147.	5.2	31
34	Electrochemical Oxidation of Smooth and Nanoscale Rough Pt(111): An In Situ Surface X-ray Scattering Study. Journal of the Electrochemical Society, 2017, 164, H608-H614.	2.9	30
35	Electrochemical impedance of multistep mechanisms: mechanisms with diffusing species. Journal of Electroanalytical Chemistry, 1996, 403, 11-24.	3.8	29
36	Dynamic Electrochemical Impedance Spectroscopy. ECS Transactions, 2009, 19, 31-42.	0.5	29

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37	Interaction of water with stepped Ni(760): associative versus dissociative adsorption and autocatalytic decomposition. Surface Science, 1996, 356, 195-208.	1.9	28
38	Ac voltammetry for measurement of surface kinetics. Journal of Electroanalytical Chemistry, 1993, 355, 21-35.	3.8	27
39	Electrochemical impedance of multistep mechanisms: a general theory. Journal of Electroanalytical Chemistry, 1998, 449, 9-28.	3.8	27
40	The rate-determining step in electrochemical impedance spectroscopy. Journal of Electroanalytical Chemistry, 2015, 737, 30-36.	3.8	26
41	Theory of electrochemical impedance of surface reactions: second-harmonic and large-amplitude response. Canadian Journal of Chemistry, 1997, 75, 1508-1517.	1.1	25
42	The Akaike information criterion in weighted regression of immittance data. Electrochimica Acta, 2019, 317, 648-653.	5.2	24
43	Films formed on well-defined stainless steel single-crystal surfaces in oxygen and water: studies of the (111) plane by LEED, Auger and XPS. Corrosion Science, 1985, 25, 849-869.	6.6	23
44	TENSOR LEED ANALYSES FOR THREE CHEMISORBED STRUCTURES FORMED BY IODINE ON A Pt(111) SURFACE. Surface Review and Letters, 1999, 06, 871-881.	1.1	22
45	X-ray characterization of as-deposited, epitaxial films of Bi(012) on Au(111). Surface Science, 2006, 600, 95-105.	1.9	22
46	Autocatalytic decomposition of water on nickel (110). The Journal of Physical Chemistry, 1992, 96, 10905-10913.	2.9	21
47	A thermal desorption study of iodine on Pt(). Surface Science, 2003, 525, 149-158.	1.9	21
48	Altering the selectivity of galvanostatic CO2 reduction on Cu cathodes by periodic cyclic voltammetry and potentiostatic steps. Electrochimica Acta, 2016, 222, 133-140.	5.2	20
49	Electrooxidation of Pt(111) in acid solution. Current Opinion in Electrochemistry, 2017, 4, 69-75.	4.8	20
50	Hydrogen Bubble Templating of Fractal Ni Catalysts for Water Oxidation in Alkaline Media. ACS Applied Energy Materials, 2019, 2, 5734-5743.	5.1	20
51	Fast methanol oxidation on polycrystalline Pt. Electrochimica Acta, 2006, 52, 773-779.	5.2	18
52	Activating and deactivating mass transport effects in methanol and formic acid oxidation on platinum electrodes. Electrochimica Acta, 2010, 55, 3384-3391.	5.2	18
53	Pt oxide and oxygen reduction at Pt(111) studied by surface X-ray diffraction. Electrochemistry Communications, 2017, 84, 50-52.	4.7	18
54	Films formed on well-defined stainless steel single-crystal surfaces in borate, sulfate, perchlorate, and chloride solutions: studies of the (111) plane by LEED, Auger spectroscopy, and electrochemistry. Langmuir, 1985, 1, 232-239.	3.5	17

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55	Impedance of multistep mechanisms: equivalent circuits at equilibrium. Electrochimica Acta, 1999, 44, 4321-4329.	5.2	17
56	Activated adsorption of deuterium on Ni(110): evidence for a high temperature desorption state. Surface Science, 1988, 195, L135-L144.	1.9	15
57	Electrochemical impedance of multistep mechanisms: mechanisms with static species. Journal of Electroanalytical Chemistry, 1998, 449, 29-37.	3.8	15
58	Equivalent circuits for some surface electrochemical mechanisms. Journal of Electroanalytical Chemistry, 2004, 567, 153-166.	3.8	15
59	Mass-transport impedance at channel electrodes: accurate and approximate solutions. Electrochimica Acta, 2016, 202, 84-89.	5.2	13
60	Ion backscattering studies of the liquid-solid interface. Nuclear Instruments & Methods in Physics Research B, 1987, 28, 385-390.	1.4	12
61	The kinetics of silver electrodeposition on iodine-covered Pt(111). Journal of Electroanalytical Chemistry and Interfacial Electrochemistry, 1991, 318, 271-282.	0.1	12
62	Kinetic study of CO oxidation on clean and oxidized Pt. Electrochimica Acta, 2012, 82, 550-557.	5.2	12
63	Method for studying high temperature aqueous electrochemical systems: Methanol and glycerol oxidation. Electrochimica Acta, 2016, 222, 1792-1799.	5.2	12
64	Understanding reaction mechanisms using dynamic electrochemical impedance spectroscopy: Methanol oxidation on Pt. Electrochimica Acta, 2019, 323, 134764.	5.2	12
65	Solidâ€state ambientâ€temperature ultrahigh vacuum iodine source. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1996, 14, 256-257.	2.1	11
66	Underpotential electrodeposition of Ag on iodine-covered Pt single-crystal electrodes. Journal of Electroanalytical Chemistry, 2000, 488, 32-41.	3.8	10
67	Mass transfer and convection effects in small-scale catalytic hydrogenation. Catalysis Science and Technology, 2017, 7, 2609-2615.	4.1	9
68	EIS at carbon fiber cylindrical microelectrodes. Electrochemistry Communications, 2019, 109, 106566.	4.7	9
69	Ultrahigh-Vacuum Surface Analytical Methods in Electrochemical Studies of Single-Crystal Surfaces. Modern Aspects of Electrochemistry, 1996, , 1-60.	0.2	9
70	Tensor LEED analysis for the electrodeposited Pt(111)-(3Ã—3)â€“Ag,I surface structure. Surface Science, 2001, 490, 256-264.	1.9	8
71	A microfluidic electrochemical cell with integrated PdH reference electrode for high current experiments. Electrochimica Acta, 2017, 225, 69-77.	5.2	8
72	Anodic phase formation on lead amalgam electrodes in sodium sulfide solution. Journal of Electroanalytical Chemistry and Interfacial Electrochemistry, 1989, 274, 61-80.	0.1	7

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73	Improving the detection limit of a quadrupole mass spectrometer. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2001, 19, 1032-1033.	2.1	7
74	Multiple Electrochemical Impedance Spectra Parameterization (MEISP+). Version 2.0 Kumho Petrochemical Co. Ltd., Kumho Chemical Laboratories, P.O. Box 64, Yuseong, Taejeon, 305-600, Korea. Fax:Â 82 42 862 5651. http://powergraphy.com. Contact Kumho for price.. Journal of the American Chemical Society, 2002, 124, 1554-1555.	13.7	7
75	Electrochemical quartz-crystal microbalance study of silver and copper electrodeposition on bare and iodine-covered platinum electrodes. Journal of Electroanalytical Chemistry, 2004, 569, 61-70.	3.8	7
76	(Invited) Dynamic and Coverage Effects in EIS. ECS Transactions, 2013, 45, 3-14.	0.5	7
77	A semianalytical method for simulating mass transport at channel electrodes. Journal of Electroanalytical Chemistry, 2015, 745, 72-79.	3.8	7
78	Understanding Reaction Mechanisms Using Dynamic Electrochemical Impedance Spectroscopy: Modeling of Cyclic Voltammetry and Impedance Spectra. ECS Transactions, 2018, 85, 167-176.	0.5	7
79	Generator-Sensor Impedance at Double Channel Electrodes. Electrochimica Acta, 2017, 229, 452-457.	5.2	6
80	Dynamic Impedance of Formic Acid Electrooxidation on Polycrystalline Palladium. ECS Transactions, 2009, 19, 123-129.	0.5	5
81	Increasing and Decreasing Mass Transport Effects in the Oxidation of Small Organic Molecules. ECS Transactions, 2010, 28, 203-210.	0.5	5
82	Layer-by-Layer Characterization of a Model Biofuel Cell Anode by (in Situ) Vibrational Spectroscopy. Journal of Physical Chemistry C, 2011, 115, 310-316.	3.1	5
83	A Study of Methanol Oxidation by Dynamic Electrochemical Impedance Spectroscopy. ECS Transactions, 2012, 41, 35-47.	0.5	5
84	Vertically Aligned Ni Nanowires as a Platform for Kinetically Limited Water-Splitting Electrocatalysis. Journal of Physical Chemistry C, 2019, 123, 1082-1093.	3.1	5
85	Simplifying mechanistic impedances. Electrochimica Acta, 2020, 338, 135895.	5.2	5
86	Anomalous adsorption of Cs on Pt(111). Surface Science, 2009, 603, 2005-2014.	1.9	4
87	Stability of Surface Mechanisms with Three Species and Mass-Action Kinetics. Journal of Mathematical Chemistry, 2002, 32, 281-301.	1.5	3
88	Initial stages of thallium electrodeposition on iodine-covered Pt(111). Journal of Electroanalytical Chemistry, 2004, 567, 185-192.	3.8	3
89	Rules to transform concentrations and currents for irreversible reactions to those of quasireversible reactions. Electrochimica Acta, 2015, 152, 308-314.	5.2	3
90	Method for Studying High Temperature Aqueous Electrochemical Systems: A Self Pressurized Autoclave. ECS Transactions, 2016, 75, 1055-1061.	0.5	3

#	ARTICLE	IF	CITATIONS
91	Two-dimensional nucleation and growth on spherical electrodes. Journal of Electroanalytical Chemistry and Interfacial Electrochemistry, 1989, 274, 81-94.	0.1	2
92	Energetics and bonding of the Pt(111)(3Ã—3)â€"Ag,I surface compound. Journal of Electroanalytical Chemistry, 2005, 583, 77-83.	3.8	2
93	Coadsorption of cesium and iodine on Pt(111): Structure and ionicity. Surface Science, 2010, 604, 2106-2115.	1.9	2
94	The role of available sites in the activity of lattice gases with geometric constraints. Journal of Chemical Physics, 2013, 139, 104104.	3.0	2
95	Oxygen and iodine adsorption on cesium-precovered Pt(111). Surface Science, 2014, 630, 9-15.	1.9	2
96	Summary Abstract: Subsurface deuterium on Ni(110). Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1988, 6, 778-779.	2.1	1
97	Electrochemical Study of Pt(111)-Cs Surfaces Prepared in Ultra-High Vacuum. ECS Transactions, 2010, 28, 47-55.	0.5	0
98	Formation and Oxidation Kinetics of Adsorbed CO in Electrocatalytic Reactions on Pt. ECS Meeting Abstracts, 2011, , .	0.0	0
99	(Keynote) Experimental Considerations for Electrocatalytic CO2Reduction. ECS Transactions, 2017, 80, 1191-1201.	0.5	0
100	From Salt to Germanene: A Cookbook for Electrochemical Formation of 2D Materials (Inspired by R.) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5	0.5	0
101	Structure-Dependence of the Atomic-Scale Mechanisms of Pt Electrooxidation and Dissolution. ECS Meeting Abstracts, 2021, MA2021-01, 1823-1823.	0.0	0
102	Detection of Electrooxidation Products in Microfluidic Devices Using Raman Spectroscopy. ECS Meeting Abstracts, 2018, , .	0.0	0
103	Kinetics of Initial Stages of Pt Oxidation from Electrochemistry and Surface X-Ray Diffraction. ECS Meeting Abstracts, 2018, , .	0.0	0
104	Surface Oxidation of Pt(111) Studied By Surface X-Ray Diffraction and Grazing-Incidence Small-Angle X-Ray Scattering. ECS Meeting Abstracts, 2018, , .	0.0	0
105	High Temperature Electrooxidation of Glycerol on Nickel. ECS Meeting Abstracts, 2018, , .	0.0	0
106	A Dynamic Impedance Study of the Initial Stages of Nickel Oxidation. ECS Meeting Abstracts, 2018, , .	0.0	0
107	Downstream Impedance in Microfluidic Channels. ECS Meeting Abstracts, 2018, , .	0.0	0
108	Understanding Reaction Mechanisms Using Dynamic Electrochemical Impedance Spectroscopy: Methanol and Formic Acid Oxidation. ECS Meeting Abstracts, 2018, , .	0.0	0

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109	From Salt to Germanene: A Cookbook for Electrochemical Formation of 2D Materials (Inspired by R.) Tj ETQq1 1 0.784314 rgBT /Over	0.0	0
110	Simplifying Mechanistic Impedances. ECS Meeting Abstracts, 2020, MA2020-01, 2575-2575.	0.0	0
111	Detection of Electrooxidation Products in Microfluidic Devices Using Raman Spectroscopy. ECS Meeting Abstracts, 2020, MA2020-01, 2608-2608.	0.0	0
112	In Situ Studies of the Oxide Structure and Oxide Growth on Single Crystal Platinum Surfaces. ECS Meeting Abstracts, 2021, MA2021-02, 1464-1464.	0.0	0
113	Electrooxidation of Platinum. ECS Meeting Abstracts, 2022, MA2022-01, 2321-2321.	0.0	0
114	New Insights into Pt Dissolution Mechanisms from SFC-ICP-MS Measurements for Well-Defined Surfaces. ECS Meeting Abstracts, 2022, MA2022-01, 1944-1944.	0.0	0