Martin A Edwards

List of Publications by Year
in descending order

79 papers	3,836 citations	117625 34 h-index	128289 60 g-index
83 all docs	83 docs citations	83 times ranked	3658 citing authors

#	Article	IF	Citations
1	A synthetic chemist's guide to electroanalytical tools for studying reaction mechanisms. Chemical Science, 2019, 10, 6404-6422.	7.4	255
2	Localized High Resolution Electrochemistry and Multifunctional Imaging: Scanning Electrochemical Cell Microscopy. Analytical Chemistry, 2010, 82, 9141-9145.	6.5	254
3	Electrochemically Driven, Ni-Catalyzed Aryl Amination: Scope, Mechanism, and Applications. Journal of the American Chemical Society, 2019, 141, 6392-6402.	13.7	251
4	Scanning Micropipet Contact Method for High-Resolution Imaging of Electrode Surface Redox Activity. Analytical Chemistry, 2009, 81, 2486-2495.	6.5	184
5	Observation of Multipeak Collision Behavior during the Electro-Oxidation of Single Ag Nanoparticles. Journal of the American Chemical Society, 2017, 139, 708-718.	13.7	181
6	Nanoscale Measurement of the Dielectric Constant of Supported Lipid Bilayers in Aqueous Solutions with Electrostatic Force Microscopy. Biophysical Journal, 2013, 104, 1257-1262.	0.5	149
7	Voltage-Rectified Current and Fluid Flow in Conical Nanopores. Accounts of Chemical Research, 2016, 49, 2605-2613.	15.6	136
8	Critical Nuclei Size, Rate, and Activation Energy of H₂ Gas Nucleation. Journal of the American Chemical Society, 2018, 140, 4047-4053.	13.7	122
9	Scanning electrochemical microscopy: principles and applications to biophysical systems. Physiological Measurement, 2006, 27, R63-R108.	2.1	112
10	Collision Dynamics during the Electrooxidation of Individual Silver Nanoparticles. Journal of the American Chemical Society, 2017, 139, 16923-16931.	13.7	95
11	Scanning Ion Conductance Microscopy: a Model for Experimentally Realistic Conditions and Image Interpretation. Analytical Chemistry, 2009, 81, 4482-4492.	6.5	87
12	Quantifying the dielectric constant of thick insulators using electrostatic force microscopy. Applied Physics Letters, 2010, 96, .	3.3	81
13	Electrochemistry of single nanobubbles. Estimating the critical size of bubble-forming nuclei for gas-evolving electrode reactions. Faraday Discussions, 2016, 193, 223-240.	3.2	73
14	Electrochemical Generation of Individual O₂ Nanobubbles via H₂O₂ Oxidation. Journal of Physical Chemistry Letters, 2017, 8, 2450-2454.	4.6	73
15	Intermittent Contactâˆ’Scanning Electrochemical Microscopy (ICâˆ’SECM): A New Approach for Tip Positioning and Simultaneous Imaging of Interfacial Topography and Activity. Analytical Chemistry, 2010, 82, 6334-6337.	6.5	71
16	Quantitative visualization of passive transport across bilayer lipid membranes. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 14277-14282.	7.1	69
17	High-Speed Multipass Coulter Counter with Ultrahigh Resolution. ACS Nano, 2015, 9, 12274-12282.	14.6	59
18	Laplace Pressure of Individual H₂ Nanobubbles from Pressureâ€“Addition Electrochemistry. Nano Letters, 2016, 16, 6691-6694.	9.1	59

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19	Nanopore Opening at Flat and Nanotip Conical Electrodes during Vesicle Impact Electrochemical Cytometry. ACS Nano, 2018, 12, 3010-3019.	14.6	59
20	Voltammetric Determination of the Stochastic Formation Rate and Geometry of Individual H_{2,} N₂, and O₂ Bubble Nuclei. ACS Nano, 2019, 13, 6330-6340.	14.6	56
21	Slow Diffusion Reveals the Intrinsic Electrochemical Activity of Basal Plane Highly Oriented Pyrolytic Graphite Electrodes. Journal of Physical Chemistry C, 2009, 113, 9218-9223.	3.1	55
22	The Nucleation Rate of Single O₂ Nanobubbles at Pt Nanoelectrodes. Langmuir, 2018, 34, 7309-7318.	3.5	54
23	Electric Polarization Properties of Single Bacteria Measured with Electrostatic Force Microscopy. ACS Nano, 2014, 8, 9843-9849.	14.6	52
24	Ion Transport within High Electric Fields in Nanogap Electrochemical Cells. ACS Nano, 2015, 9, 8520-8529.	14.6	49
25	Electrochemical Measurement of Hydrogen and Nitrogen Nanobubble Lifetimes at Pt Nanoelectrodes. Journal of the Electrochemical Society, 2016, 163, H3160-H3166.	2.9	46
26	Effect of the Electric Double Layer on the Activation Energy of Ion Transport in Conical Nanopores. Journal of Physical Chemistry C, 2015, 119, 24299-24306.	3.1	43
27	Redox Cycling in Nanogap Electrochemical Cells. The Role of Electrostatics in Determining the Cell Response. Journal of Physical Chemistry C, 2016, 120, 17251-17260.	3.1	42
28	The Dynamic Steady State of an Electrochemically Generated Nanobubble. Langmuir, 2017, 33, 1845-1853.	3.5	42
29	Intrinsic Kinetics of Gypsum and Calcium Sulfate Anhydrite Dissolution: Surface Selective Studies under Hydrodynamic Control and the Effect of Additives. Journal of Physical Chemistry C, 2011, 115, 10147-10154.	3.1	40
30	Visualization of Hydrogen Evolution at Individual Platinum Nanoparticles at a Buried Interface. Journal of the American Chemical Society, 2020, 142, 8890-8896.	13.7	40
31	The importance of nanoscale confinement to electrocatalytic performance. Chemical Science, 2020, 11, 1233-1240.	7.4	39
32	Single-entity electrochemistry at confined sensing interfaces. Science China Chemistry, 2020, 63, 589-618.	8.2	38
33	Scanning Electrochemical Microscopy as a Quantitative Probe of Acid-Induced Dissolution: Theory and Application to Dental Enamel. Analytical Chemistry, 2010, 82, 9322-9328.	6.5	37
34	Nanoscale electrochemical kinetics & dynamics: the challenges and opportunities of single-entity measurements. Faraday Discussions, 2018, 210, 9-28.	3.2	36
35	Effects of Instrumental Filters on Electrochemical Measurement of Singleâ€Nanoparticle Collision Dynamics. ChemElectroChem, 2018, 5, 3059-3067.	3.4	36
36	High-Performance Solid-State Lithium-Ion Battery with Mixed 2D and 3D Electrodes. ACS Applied Energy Materials, 2020, 3, 8402-8409.	5.1	35

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37	Dynamic electrostatic force microscopy in liquid media. Applied Physics Letters, 2012, 101, .	3.3	32
38	Visualization and Modeling of the Hydrodynamics of an Impinging Microjet. Analytical Chemistry, 2006, 78, 1435-1443.	6.5	31
39	Electric Fieldâ€Controlled Synthesis and Characterisation of Single Metalâ€“Organicâ€Framework (MOF) Nanoparticles. Angewandte Chemie - International Edition, 2020, 59, 19696-19701.	13.8	31
40	Nanopipettes as a tool for single nanoparticle electrochemistry. Current Opinion in Electrochemistry, 2017, 6, 4-9.	4.8	30
41	Three-Dimensional Super-resolution Imaging of Single Nanoparticles Delivered by Pipettes. ACS Nano, 2017, 11, 10529-10538.	14.6	30
42	Collision and Oxidation of Silver Nanoparticles on a Gold Nanoband Electrode. Journal of Physical Chemistry C, 2017, 121, 23564-23573.	3.1	29
43	Nanoscale Fluid Vortices and Nonlinear Electroosmotic Flow Drive Ion Current Rectification in the Presence of Concentration Gradients. Journal of Physical Chemistry A, 2019, 123, 8285-8293.	2.5	29
44	Coupled Electron- and Phase-Transfer Reactions at a Three-Phase Interface. Journal of the American Chemical Society, 2019, 141, 18091-18098.	13.7	29
45	Silver Particle Nucleation and Growth at Liquid/Liquid Interfaces: A Scanning Electrochemical Microscopy Approach. Journal of Physical Chemistry C, 2009, 113, 3553-3565.	3.1	27
46	Quantitative Localized Proton-Promoted Dissolution Kinetics of Calcite Using Scanning Electrochemical Microscopy (SECM). Journal of Physical Chemistry C, 2012, 116, 14892-14899.	3.1	27
47	Stochasticity in single-entity electrochemistry. Current Opinion in Electrochemistry, 2021, 25, 100632.	4.8	27
48	Quantitative Analysis and Application of Tip Position Modulation-Scanning Electrochemical Microscopy. Analytical Chemistry, 2011, 83, 1977-1984.	6.5	26
49	Shot noise sets the limit of quantification in electrochemical measurements. Current Opinion in Electrochemistry, 2020, 22, 170-177.	4.8	26
50	Electrochemically Controlled Nucleation of Single CO2Nanobubbles via Formate Oxidation at Pt Nanoelectrodes. Journal of Physical Chemistry Letters, 2020, 11, 1291-1296.	4.6	26
51	Nitrogen Bubbles at Pt Nanoelectrodes in a Nonaqueous Medium: Oscillating Behavior and Geometry of Critical Nuclei. Analytical Chemistry, 2020, 92, 6408-6414.	6.5	25
52	Resistive Pulse Delivery of Single Nanoparticles to Electrochemical Interfaces. Journal of Physical Chemistry Letters, 2016, 7, 3920-3924.	4.6	23
53	Quantitative electrostatic force microscopy with sharp silicon tips. Nanotechnology, 2014, 25, 495701.	2.6	22
54	Theory of amplitude modulated electrostatic force microscopy for dielectric measurements in liquids at MHz frequencies. Nanotechnology, 2013, 24, 415709.	2.6	20

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55	Multipass Resistive-Pulse Observations of the Rotational Tumbling of Individual Nanorods. Journal of Physical Chemistry C, 2016, 120, 20781-20788.	3.1	20
56	Observing Transient Bipolar Electrochemical Coupling on Single Nanoparticles Translocating through a Nanopore. Langmuir, 2019, 35, 7180-7190.	3.5	20
57	Holistic approach to dissolution kinetics: linking direction-specific microscopic fluxes, local mass transport effects and global macroscopic rates from gypsum etch pit analysis. Physical Chemistry Chemical Physics, 2013, 15, 1956-1965.	2.8	18
58	Intrinsic electrochemical activity of single walled carbon nanotubeâ€"Nafion assemblies. Physical Chemistry Chemical Physics, 2013, 15, 5030.	2.8	14
59	Characterization of Solute Distribution Following Iontophoresis from a Micropipet. Analytical Chemistry, 2014, 86, 9909-9916.	6.5	14
60	Exploring the suitability of different electrode materials for hypochlorite quantification at high concentration in alkaline solutions. Electrochemistry Communications, 2018, 86, 21-25.	4.7	14
61	Electrochemistry of single nanoparticles: general discussion. Faraday Discussions, 2016, 193, 387-413.	3.2	13
62	Single Ag nanoparticle collisions within a dual-electrode micro-gap cell. Faraday Discussions, 2018, 210, 189-200.	3.2	13
63	Investigation of sp²-Carbon Pattern Geometry in Boron-Doped Diamond Electrodes for the Electrochemical Quantification of Hypochlorite at High Concentrations. ACS Sensors, 2020, 5, 789-797.	7.8	13
64	Electrochemical Generation of Individual Nanobubbles Comprising H₂, D₂, and HD. Langmuir, 2020, 36, 6073-6078.	3.5	11
65	Electrochemical Reduction of [Ni(Mebpy)₃]²⁺: Elucidation of the Redox Mechanism by Cyclic Voltammetry and Steadyâ€State Voltammetry in Low Ionic Strength Solutions. ChemElectroChem, 2020, 7, 1473-1479.	3.4	11
66	Quantitative analysis of iontophoretic drug delivery from micropipettes. Analyst, The, 2016, 141, 1930-1938.	3.5	10
67	Effect of Viscosity on the Collision Dynamics and Oxidation of Individual Ag Nanoparticles. Journal of Physical Chemistry C, 2020, 124, 9068-9076.	3.1	10
68	Deletion of ENTPD3 does not impair nucleotide hydrolysis in primary somatosensory neurons or spinal cord. F1000Research, 2014, 3, 163.	1.6	9
69	A High-Pressure System for Studying Oxygen Reduction During Pt Nanoparticle Collisions. Journal of the Electrochemical Society, 2020, 167, 166507.	2.9	9
70	Current Response for a Single Redox Moiety Trapped in a Closed Generator-Collector System: The Role of Capacitive Coupling. Analytical Chemistry, 2015, 87, 3778-3783.	6.5	8
71	Highlights from the Faraday Discussion on Single Entity Electrochemistry, York, UK, Augustâ€"September 2016. Chemical Communications, 2016, 52, 13934-13940.	4.1	7
72	From single cells to single molecules: general discussion. Faraday Discussions, 2016, 193, 141-170.	3.2	4

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73	Dynamics of nanointerfaces: general discussion. Faraday Discussions, 2018, 210, 451-479.	3.2	4
74	Reply to Missner <i>et al.</i> : Timescale for passive diffusion across bilayer lipid membranes. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, .	7.1	3
75	Processes at nanopores and bio-nanointerfaces: general discussion. Faraday Discussions, 2018, 210, 145-171.	3.2	3
76	Electric Fieldâ€Controlled Synthesis and Characterisation of Single Metalâ€"Organicâ€Framework (MOF) Nanoparticles. Angewandte Chemie, 2020, 132, 19864-19869.	2.0	3
77	Quantitative Dielectric Measurements of Biomembranes and Oxides in Electrolyte Solutions at High Frequencies. Biophysical Journal, 2014, 106, 512a.	0.5	1
78	Processes at nanoelectrodes: general discussion. Faraday Discussions, 2018, 210, 235-265.	3.2	1
79	Design and characterization of a microfabricated hydrogen clearance blood flow sensor. Journal of Neuroscience Methods, 2016, 267, 132-140.	2.5	0