

Laurence J Hardwick

List of Publications by Year in descending order

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115
papers

16,811
citations

53660

45
h-index

33814

99
g-index

122
all docs

122
docs citations

122
times ranked

16002
citing authors

#	ARTICLE	IF	CITATIONS
1	Porous polyimide separator promotes uniform lithium plating for lithium-free cells. <i>Electrochemical Science Advances</i> , 2022, 2, e2100091.	1.2	5
2	Investigating the presence of adsorbed species on Pt steps at low potentials. <i>Nature Communications</i> , 2022, 13, 2550.	5.8	37
3	A Pyrene-4,5,9,10-Tetraone-Based Covalent Organic Framework Delivers High Specific Capacity as a Li-Ion Positive Electrode. <i>Journal of the American Chemical Society</i> , 2022, 144, 9434-9442.	6.6	77
4	Dynamics of Solid-Electrolyte Interphase Formation on Silicon Electrodes Revealed by Combinatorial Electrochemical Screening. <i>Angewandte Chemie - International Edition</i> , 2022, 61, .	7.2	32
5	Multi-Functional Polyimide Separators for Electrochemical Capacitor and Lithium-Ion Cell Applications. <i>ECS Meeting Abstracts</i> , 2022, MA2022-01, 550-550.	0.0	0
6	Lithium Insertion into Graphitic Carbon Observed via Operando Kerr-Gated Raman Spectroscopy Enables High State of Charge Diagnostics. <i>ACS Energy Letters</i> , 2022, 7, 2611-2618.	8.8	5
7	Operando electrochemical Kerr Gated Raman Spectroscopy to Probe the High States of Charge in Graphite Electrodes for Li-Ion Batteries. <i>ECS Meeting Abstracts</i> , 2022, MA2022-01, 2475-2475.	0.0	0
8	Operando Surface Enhanced Infrared Spectroscopic Investigations of Interfacial Restructuring and Oxygen Electrochemistry in Ionic Liquid Electrolytes for Metal-Air Batteries. <i>ECS Meeting Abstracts</i> , 2022, MA2022-01, 569-569.	0.0	0
9	Stable Formulations for the Lithium and Sodium Metal Interfaces in Alkali Metal-Oxygen Batteries. <i>ECS Meeting Abstracts</i> , 2022, MA2022-01, 496-496.	0.0	0
10	Gas Evolution from Sulfide-Based All-Solid-State Batteries. <i>ECS Meeting Abstracts</i> , 2022, MA2022-01, 231-231.	0.0	0
11	Engineering of electrospun polyimide separators for electrical double-layer capacitors and lithium-ion cells. <i>Journal of Power Sources</i> , 2021, 482, 229054.	4.0	31
12	Trapped interfacial redox introduces reversibility in the oxygen reduction reaction in a non-aqueous Ca^{2+} electrolyte. <i>Chemical Science</i> , 2021, 12, 8909-8919.	3.7	5
13	Divalent Nonaqueous Metal-Air Batteries. <i>Frontiers in Energy Research</i> , 2021, 8, .	1.2	24
14	The Effect of Degrees of Inversion on the Electronic Structure of Spinel NiCo_2O_4 : A Density Functional Theory Study. <i>ACS Omega</i> , 2021, 6, 9692-9699.	1.6	32
15	Design Parameters for Ionic Liquid-Molecular Solvent Blend Electrolytes to Enable Stable Li Metal Cycling Within Li^{+}O_2 Batteries. <i>Advanced Functional Materials</i> , 2021, 31, 2010627.	7.8	16
16	Ionic Liquids: Design Parameters for Ionic Liquid-Molecular Solvent Blend Electrolytes to Enable Stable Li Metal Cycling Within Li^{+}O_2 Batteries (Adv. Funct. Mater. 27/2021). <i>Advanced Functional Materials</i> , 2021, 31, 2170193.	7.8	0
17	Element selection for crystalline inorganic solid discovery guided by unsupervised machine learning of experimentally explored chemistry. <i>Nature Communications</i> , 2021, 12, 5561.	5.8	32
18	Integrated Covalent Organic Framework/Carbon Nanotube Composite as Li^{+}O_2 Positive Electrode with Ultra-High Rate Performance. <i>Advanced Energy Materials</i> , 2021, 11, 2101880.	10.2	73

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19	Data Management Plans: the Importance of Data Management in the BIG-MAP Project**. Batteries and Supercaps, 2021, 4, 1803-1812.	2.4	19
20	Extended Condensed Ultraphosphate Frameworks with Monovalent Ions Combine Lithium Mobility with High Computed Electrochemical Stability. Journal of the American Chemical Society, 2021, 143, 18216-18232.	6.6	7
21	Ordered Oxygen Vacancies in the Lithium-Rich Oxide $\text{Li}_4\text{CuSbO}_{5.5}$, a Triclinic Structure Type Derived from the Cubic Rocksalt Structure. Inorganic Chemistry, 2021, 60, 19022-19034.	1.9	0
22	Water oxidation intermediates on iridium oxide electrodes probed by <i>in situ</i> electrochemical SHINERS. Chemical Communications, 2020, 56, 1129-1132.	2.2	41
23	Intercalation behaviour of Li and Na into 3-layer and multilayer MoS_2 flakes. Electrochimica Acta, 2020, 331, 135284.	2.6	26
24	An electrochemical investigation of oxygen adsorption on Pt single crystal electrodes in a non-aqueous Li^+ electrolyte. Electrochemistry Communications, 2020, 119, 106814.	2.3	6
25	Crosslinked Polyimide and Reduced Graphene Oxide Composites as Long Cycle Life Positive Electrode for Lithium-Ion Cells. ChemSusChem, 2020, 13, 5571-5579.	3.6	14
26	$\text{Na}_2\text{Fe}_2\text{OS}_2$, a new earth abundant oxysulphide cathode material for Na-ion batteries. Journal of Materials Chemistry A, 2020, 8, 20553-20569.	5.2	11
27	Quantitative Resolution of Complex Stoichiometric Changes during Electrochemical Cycling by Density Functional Theory-Assisted Electrochemical Quartz Crystal Microbalance. ACS Applied Energy Materials, 2020, 3, 3347-3357.	2.5	14
28	Observation of Interfacial Degradation of $\text{Li}_6\text{PS}_5\text{Cl}$ against Lithium Metal and LiCoO_2 via <i>In Situ</i> Electrochemical Raman Microscopy. Batteries and Supercaps, 2020, 3, 647-652.	2.4	63
29	2020 roadmap on solid-state batteries. JPhys Energy, 2020, 2, 032008.	2.3	74
30	$\text{Sn } 5s^2$ lone pairs and the electronic structure of tin sulphides: A photoreflectance, high-energy photoemission, and theoretical investigation. Physical Review Materials, 2020, 4, .	0.9	11
31	Achieving Stable Cycling of Li-Metal Anodes in Li-O ₂ Batteries: Optimizing Solvation Environment in Ionic Liquid/Solvent Blend Formulations. ECS Meeting Abstracts, 2020, MA2020-01, 441-441.	0.0	0
32	(Invited) Kerr Gated Raman Spectroscopy to Investigate Aging Processes on Lithium-Ion Electrode Interfaces. ECS Meeting Abstracts, 2020, MA2020-01, 190-190.	0.0	0
33	Observation of Interfacial Degradation of Solid Electrolytes Against Lithium Metal and Layered Transition Metal Oxides Via <i>In Situ</i> Electrochemical Raman Microscopy. ECS Meeting Abstracts, 2020, MA2020-02, 889-889.	0.0	0
34	(Invited) Design of Electrospun Polyimide-Based Separators for Electrical Double-Layer Capacitors and Lithium-Ion Batteries. ECS Meeting Abstracts, 2020, MA2020-02, 604-604.	0.0	0
35	Enhanced oxygen evolution performance of spinel $\text{Fe}_{0.1}\text{Ni}_{0.9}\text{Co}_2\text{O}_4$ /Activated carbon composites. Electrochimica Acta, 2019, 326, 134986.	2.6	14
36	Oxygen reactions on Pt{ <i>hk</i> } in a non-aqueous Na^+ electrolyte: site selective stabilisation of a sodium peroxy species. Chemical Science, 2019, 10, 2956-2964.	3.7	25

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37	Evaluating chemical bonding in dioxides for the development of metal–oxygen batteries: vibrational spectroscopic trends of dioxygenyls, dioxygen, superoxides and peroxides. <i>Physical Chemistry Chemical Physics</i> , 2019, 21, 1552-1563.	1.3	22
38	Fabrication of a Light-Weight Dual-Function Modified Separator towards High-Performance Lithium–Sulfur Batteries. <i>ChemElectroChem</i> , 2019, 6, 3648-3656.	1.7	11
39	Advanced Spectroelectrochemical Techniques to Study Electrode Interfaces Within Lithium-Ion and Lithium-Oxygen Batteries. <i>Annual Review of Analytical Chemistry</i> , 2019, 12, 323-346.	2.8	39
40	Stabilization of O–O Bonds by d ⁰ Cations in Li ₄ NiWO ₆ (0 at% 0.25) Rock Salt Oxides as the Origin of Large Voltage Hysteresis. <i>Journal of the American Chemical Society</i> , 2019, 141, 7333-7346.	6.6	61
41	Adsorption, surface relaxation and electrolyte structure at Pt(111) electrodes in non-aqueous and aqueous acetonitrile electrolytes. <i>Physical Chemistry Chemical Physics</i> , 2019, 21, 8654-8662.	1.3	12
42	Approach to Wide-Frequency Battery Impedance Measurements in Commercial Applications. , 2019, , .		4
43	Kerr gated Raman spectroscopy of LiPF ₆ salt and LiPF ₆ -based organic carbonate electrolyte for Li-ion batteries. <i>Physical Chemistry Chemical Physics</i> , 2019, 21, 23833-23842.	1.3	27
44	A light-weight free-standing graphene foam-based interlayer towards improved Li-S cells. <i>Electrochimica Acta</i> , 2019, 299, 479-488.	2.6	45
45	In-situ Electrochemical SHINERS Investigation of SEI Composition on Carbon-Coated Zn _{0.9} Fe _{0.1} O Anode for Lithium-Ion Batteries. <i>Batteries and Supercaps</i> , 2019, 2, 168-177.	2.4	32
46	Anionic Redox in Li-Rich Rocksalt Oxides Studied Via X-Ray Photoelectron Spectroscopy. <i>ECS Meeting Abstracts</i> , 2019, , .	0.0	0
47	Oxygen Reduction at Pt{Hkl} Electrodes in an Alkali Metal Ion Containing Aprotic Solvent. <i>ECS Meeting Abstracts</i> , 2019, , .	0.0	0
48	Exploring Ionic Liquid-Solvent Blend Formulations for the Stable Cycling of Li-Metal Anodes in Li-O ₂ Batteries. <i>ECS Meeting Abstracts</i> , 2019, , .	0.0	0
49	Kerr Gated Raman Spectroscopy to Investigate Lithium-Ion Battery Interfaces. <i>ECS Meeting Abstracts</i> , 2019, , .	0.0	0
50	Binder Degradation in Sodium- and Potassium-Oxygen Batteries. <i>ECS Meeting Abstracts</i> , 2019, , .	0.0	0
51	Rechargeable Multi-Valent Metal-Air Batteries. <i>Johnson Matthey Technology Review</i> , 2018, 62, 134-149.	0.5	31
52	Growth and dissolution of NaO ₂ in an ether-based electrolyte as the discharge product in the Na–O ₂ cell. <i>Chemical Communications</i> , 2018, 54, 3444-3447.	2.2	8
53	Structure and dynamics of ionic liquids: general discussion. <i>Faraday Discussions</i> , 2018, 206, 291-337.	1.6	8
54	Electrochemistry: general discussion. <i>Faraday Discussions</i> , 2018, 206, 405-426.	1.6	13

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55	Lithium Transport in $\text{Li}_{4-x}\text{M}_x\text{O}_4$ ($M = \text{Al}^{3+}, \text{Ga}^{3+}, \text{and } \text{M}^{2+} = \text{Ge}^{4+}, \text{Sn}^{4+}$): Combined Crystallographic, Conductivity, Solid State NMR, and Computational Studies. <i>Chemistry of Materials</i> , 2018, 30, 7183-7200.	3.2	28
56	Time-resolved SERS study of the oxygen reduction reaction in ionic liquid electrolytes for non-aqueous lithium-oxygen cells. <i>Faraday Discussions</i> , 2018, 206, 379-392.	1.6	23
57	(Invited) Oxygen Reactions at Poly and Single Crystalline Electrodes in a Sodium-Ion Containing Aprotic Solvent. <i>ECS Meeting Abstracts</i> , 2018, , .	0.0	0
58	$\text{Na}_{0.35}\text{MnO}_2$ as an ionic conductor with randomly distributed nano-sized layers. <i>Journal of Materials Chemistry A</i> , 2017, 5, 10021-10026.	5.2	13
59	Shell isolated nanoparticles for enhanced Raman spectroscopy studies in lithium-oxygen cells. <i>Faraday Discussions</i> , 2017, 205, 469-490.	1.6	35
60	In situ Raman spectroscopic analysis of the lithiation and sodiation of antimony microparticles. <i>Electrochimica Acta</i> , 2017, 247, 296-305.	2.6	32
61	In Situ Surface-Enhanced Infrared Spectroscopy to Identify Oxygen Reduction Products in Nonaqueous Metal-Oxygen Batteries. <i>Journal of Physical Chemistry C</i> , 2017, 121, 19657-19667.	1.5	42
62	Template-free synthesis of nitrogen doped carbon materials from an organic ionic dye (murexide) for supercapacitor application. <i>RSC Advances</i> , 2017, 7, 54626-54637.	1.7	16
63	Analytical SERS: general discussion. <i>Faraday Discussions</i> , 2017, 205, 561-600.	1.6	14
64	Solvent-Mediated Control of the Electrochemical Discharge Products of Non-Aqueous Sodium-Oxygen Electrochemistry. <i>Angewandte Chemie</i> , 2016, 128, 8394-8397.	1.6	13
65	Solvent-Mediated Control of the Electrochemical Discharge Products of Non-Aqueous Sodium-Oxygen Electrochemistry. <i>Angewandte Chemie - International Edition</i> , 2016, 55, 8254-8257.	7.2	56
66	Utilizing in Situ Electrochemical SHINERS for Oxygen Reduction Reaction Studies in Aprotic Electrolytes. <i>Journal of Physical Chemistry Letters</i> , 2016, 7, 2119-2124.	2.1	88
67	In Situ Study of Li Intercalation into Highly Crystalline Graphitic Flakes of Varying Thicknesses. <i>Journal of Physical Chemistry Letters</i> , 2016, 7, 4291-4296.	2.1	70
68	Batteries: Avoiding oxygen. <i>Nature Energy</i> , 2016, 1, .	19.8	2
69	Three-dimensional protonic conductivity in porous organic cage solids. <i>Nature Communications</i> , 2016, 7, 12750.	5.8	133
70	In situ Raman spectroscopy of carbon-coated ZnFe_2O_4 anode material in Li-ion batteries - investigation of SEI growth. <i>Chemical Communications</i> , 2016, 52, 3970-3973.	2.2	64
71	Mechanistic Insight into the Superoxide Induced Ring Opening in Propylene Carbonate Based Electrolytes using in Situ Surface-Enhanced Infrared Spectroscopy. <i>Journal of the American Chemical Society</i> , 2016, 138, 3745-3751.	6.6	79
72	A highly active nickel electrocatalyst shows excellent selectivity for CO_2 reduction in acidic media. <i>Chemical Science</i> , 2016, 7, 1521-1526.	3.7	74

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73	The role of re-aggregation on the performance of electrochemically exfoliated many-layer graphene for Li-ion batteries. <i>Journal of Electroanalytical Chemistry</i> , 2015, 753, 35-41.	1.9	24
74	Charge storage mechanism of activated manganese oxide composites for pseudocapacitors. <i>Journal of Materials Chemistry A</i> , 2015, 3, 12786-12795.	5.2	95
75	Scaling up $\text{Li}_4\text{Ti}_5\text{O}_{12}$ for High-Power Lithium-Ion Anodes Using Large Scale Flame Spray Pyrolysis. <i>Journal of the Electrochemical Society</i> , 2015, 162, A2331-A2338.	1.3	32
76	<i>In situ</i> Raman study of lithium-ion intercalation into microcrystalline graphite. <i>Faraday Discussions</i> , 2014, 172, 223-237.	1.6	271
77	The many faces of carbon in electrochemistry: general discussion. <i>Faraday Discussions</i> , 2014, 172, 117-137.	1.6	4
78	Influence of Tetraalkylammonium Cation Chain Length on Gold and Glassy Carbon Electrode Interfaces for Alkali Metal-Oxygen Batteries. <i>Journal of Physical Chemistry Letters</i> , 2014, 5, 3924-3930.	2.1	18
79	Carbon electrodes for energy storage: general discussion. <i>Faraday Discussions</i> , 2014, 172, 239-260.	1.6	11
80	Electrochemical performance of laser micro-structured nickel oxyhydroxide cathodes. <i>Journal of Power Sources</i> , 2014, 271, 42-47.	4.0	35
81	Characterization of Aluminum Doped Lithium-Manganese Rich Composites for Higher Rate Lithium-Ion Cathodes. <i>Journal of the Electrochemical Society</i> , 2014, 161, A2109-A2116.	1.3	27
82	Criteria appointing the highest acceptable cell voltage of asymmetric supercapacitors. <i>Electrochemistry Communications</i> , 2013, 27, 81-84.	2.3	60
83	Important parameters affecting the cell voltage of aqueous electrical double-layer capacitors. <i>Journal of Power Sources</i> , 2013, 242, 289-298.	4.0	71
84	The pursuit of rechargeable non-aqueous lithium-oxygen battery cathodes. <i>Current Opinion in Solid State and Materials Science</i> , 2012, 16, 178-185.	5.6	94
85	Li-O_2 and Li-S batteries with high energy storage. <i>Nature Materials</i> , 2012, 11, 19-29.	13.3	8,166
86	Lithium Insertion into Anatase Nanotubes. <i>Chemistry of Materials</i> , 2012, 24, 4468-4476.	3.2	110
87	Direct Detection of Discharge Products in Lithium-Oxygen Batteries by Solid-State NMR Spectroscopy. <i>Angewandte Chemie - International Edition</i> , 2012, 51, 8560-8563.	7.2	75
88	Lithium-air and lithium-sulfur batteries. <i>MRS Bulletin</i> , 2011, 36, 506-512.	1.7	272
89	Reactions in the Rechargeable Li_2O Battery with Alkyl Carbonate Electrolytes. <i>Journal of the American Chemical Society</i> , 2011, 133, 8040-8047.	6.6	1,157
90	The Lithium-Oxygen Battery with Ether-Based Electrolytes. <i>Angewandte Chemie - International Edition</i> , 2011, 50, 8609-8613.	7.2	1,009

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91	Oxygen Reactions in a Non-Aqueous Li ⁺ Electrolyte. <i>Angewandte Chemie - International Edition</i> , 2011, 50, 6351-6355.	7.2	518
92	Activated Lithium-Metal-Oxides as Catalytic Electrodes for Li-O ₂ Cells. <i>Electrochemical and Solid-State Letters</i> , 2011, 14, A64.	2.2	66
93	Lithium Intercalation into Mesoporous Anatase with an Ordered 3D Pore Structure. <i>Angewandte Chemie - International Edition</i> , 2010, 49, 2570-2574.	7.2	218
94	Surface structural disordering in graphite upon lithium intercalation/deintercalation. <i>Journal of Power Sources</i> , 2010, 195, 3655-3660.	4.0	260
95	Microwave plasma chemical vapor deposition of graphitic carbon thin films. <i>Carbon</i> , 2010, 48, 1552-1557.	5.4	14
96	Lithium Diffusion in Graphitic Carbon. <i>Journal of Physical Chemistry Letters</i> , 2010, 1, 1176-1180.	2.1	662
97	FTIR and Raman Study of the Li _x Ti _y Mn _{1-y} O ₂ (y=0,0.11) Cathodes in Methylpropyl Pyrrolidinium Bis(fluoro-sulfonyl)imide, LiTFSI Electrolyte. <i>Journal of the Electrochemical Society</i> , 2009, 156, A120.	1.3	48
98	Electrochemical doping of single-walled carbon nanotubes in double layer capacitors studied by in situ Raman spectroscopy. <i>Carbon</i> , 2009, 47, 38-52.	5.4	58
99	Studying the Origin and Mechanism of Irreversible Capacity in Lithium-Ion Cells. <i>ECS Transactions</i> , 2008, 11, 139-148.	0.3	0
100	In situ Raman spectroscopy of insertion electrodes for lithium-ion batteries and supercapacitors: First cycle effects. <i>Journal of Physics and Chemistry of Solids</i> , 2008, 69, 1232-1237.	1.9	103
101	An Investigation of the Effect of Graphite Degradation on Irreversible Capacity in Lithium-ion Cells. <i>Journal of the Electrochemical Society</i> , 2008, 155, A442.	1.3	54
102	Application of In Situ Techniques for Investigations in Lithium-Ion Battery Materials. <i>ECS Transactions</i> , 2007, 3, 29-43.	0.3	7
103	Raman study of lithium coordination in EMI-TFSI additive systems as lithium-ion battery ionic liquid electrolytes. <i>Journal of Raman Spectroscopy</i> , 2007, 38, 110-112.	1.2	121
104	Behaviour of highly crystalline graphitic materials in lithium-ion cells with propylene carbonate containing electrolytes: An in situ Raman and SEM study. <i>Electrochimica Acta</i> , 2007, 52, 4884-4891.	2.6	56
105	Electrochemical lithium insertion into anatase-type TiO ₂ : An in situ Raman microscopy investigation. <i>Electrochimica Acta</i> , 2007, 52, 5357-5367.	2.6	124
106	Microwave plasma chemical vapor deposition of nano-structured Sn/C composite thin-film anodes for Li-ion batteries. <i>Journal of Power Sources</i> , 2007, 173, 965-971.	4.0	87
107	Nano silicon for lithium-ion batteries. <i>Electrochimica Acta</i> , 2006, 52, 973-978.	2.6	191
108	An in situ Raman study of the intercalation of supercapacitor-type electrolyte into microcrystalline graphite. <i>Electrochimica Acta</i> , 2006, 52, 675-680.	2.6	128

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109	Surface reactivity of graphite materials and their surface passivation during the first electrochemical lithium insertion. <i>Journal of Power Sources</i> , 2006, 153, 300-311.	4.0	79
110	Graphite surface disorder detection using in situ Raman microscopy. <i>Solid State Ionics</i> , 2006, 177, 2801-2806.	1.3	71
111	Behaviour of highly crystalline graphites in lithium-ion cells with propylene carbonate containing electrolytes. <i>Journal of Power Sources</i> , 2005, 146, 134-141.	4.0	57
112	Advanced in situ characterization methods applied to carbonaceous materials. <i>Journal of Power Sources</i> , 2005, 146, 15-20.	4.0	80
113	Raman spectroscopic and structural studies of heat-treated graphites for lithium-ion batteries. <i>Ionics</i> , 2003, 9, 258-265.	1.2	19
114	Dynamics of Solid-Electrolyte Interphase Formation on Silicon Electrodes Revealed by Combinatorial Electrochemical Screening. <i>Angewandte Chemie</i> , 0, , .	1.6	2
115	Long-Life and pH-Stable SnO ₂ -Coated Au Nanoparticles for SHINERS. <i>Journal of Physical Chemistry C</i> , 0, , .	1.5	2