William C Chueh

List of Publications by Year
in descending order

104 papers	10,623 citations	41344 49 h-index	33894 99 g-index
105 all docs	105 docs citations	105 times ranked	10551 citing authors

#	Article	IF	Citations
1	High-Flux Solar-Driven Thermochemical Dissociation of CO ₂ and H ₂ O Using Nonstoichiometric Ceria. Science, 2010, 330, 1797-1801.	12.6	1,292
2	Data-driven prediction of battery cycle life before capacity degradation. Nature Energy, 2019, 4, 383-391.	39.5	1,237
3	Closed-loop optimization of fast-charging protocols for batteries with machine learning. Nature, 2020, 578, 397-402.	27.8	470
4	Coupling between oxygen redox and cation migration explains unusual electrochemistry in lithium-rich layered oxides. Nature Communications, 2017, 8, 2091.	12.8	469
5	High-performance sodiumâ€“organic battery by realizing four-sodium storage in disodium rhodizonate. Nature Energy, 2017, 2, 861-868.	39.5	372
6	Origin and hysteresis of lithium compositional spatiodynamics within battery primary particles. Science, 2016, 353, 566-571.	12.6	367
7	Sr- and Mn-doped LaAlO3â^Î´ for solar thermochemical H2 and CO production. Energy and Environmental Science, 2013, 6, 2424.	30.8	323
8	Correlative operando microscopy of oxygen evolution electrocatalysts. Nature, 2021, 593, 67-73.	27.8	321
9	Redox activity of surface oxygen anions in oxygen-deficient perovskite oxides during electrochemical reactions. Nature Communications, 2015, 6, 6097.	12.8	297
10	High electrochemical activity of the oxide phase in model ceriaâ€“Pt and ceriaâ€“Ni composite anodes. Nature Materials, 2012, 11, 155-161.	27.5	288
11	Metalâ€“oxygen decoordination stabilizes anion redox in Li-rich oxides. Nature Materials, 2019, 18, 256-265.	27.5	280
12	Current-induced transition from particle-by-particle to concurrent intercalation in phase-separating battery electrodes. Nature Materials, 2014, 13, 1149-1156.	27.5	274
13	High Reversibility of Lattice Oxygen Redox Quantified by Direct Bulk Probes of Both Anionic and Cationic Redox Reactions. Joule, 2019, 3, 518-541.	24.0	225
14	Intercalation Pathway in Many-Particle LiFePO₄ Electrode Revealed by Nanoscale State-of-Charge Mapping. Nano Letters, 2013, 13, 866-872.	9.1	206
15	Highly Enhanced Concentration and Stability of Reactive Ce³⁺ on Doped CeO₂ Surface Revealed In Operando. Chemistry of Materials, 2012, 24, 1876-1882.	6.7	169
16	Interplay of Lithium Intercalation and Plating on a Single Graphite Particle. Joule, 2021, 5, 393-414.	24.0	168
17	Fast vacancy-mediated oxygen ion incorporation across the ceriaâ€“gas electrochemical interface. Nature Communications, 2014, 5, 4374.	12.8	160
18	Persistent Stateâ€ofâ€Charge Heterogeneity in Relaxed, Partially Charged Li_{1â^’}_xNi_{1/3}Co_{1/3}Mn_{1/3}O₂ Secondary Particles. Advanced Materials, 2016, 28, 6631-6638.	21.0	142

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19	Evolution of the Solidâ€“Electrolyte Interphase on Carbonaceous Anodes Visualized by Atomic-Resolution Cryogenic Electron Microscopy. Nano Letters, 2019, 19, 5140-5148.	9.1	132
20	Perspectiveâ€”Combining Physics and Machine Learning to Predict Battery Lifetime. Journal of the Electrochemical Society, 2021, 168, 030525.	2.9	107
21	Persistent and partially mobile oxygen vacancies in Li-rich layered oxides. Nature Energy, 2021, 6, 642-652.	39.5	106
22	Significantly enhanced photocurrent for water oxidation in monolithic Mo:BiVO₄/SnO₂/Si by thermally increasing the minority carrier diffusion length. Energy and Environmental Science, 2016, 9, 2044-2052.	30.8	105
23	The use of poly-cation oxides to lower the temperature of two-step thermochemical water splitting. Energy and Environmental Science, 2018, 11, 2172-2178.	30.8	105
24	Tuning electrochemically driven surface transformation in atomically flat LaNiO3 thin films for enhanced water electrolysis. Nature Materials, 2021, 20, 674-682.	27.5	105
25	Fluid-enhanced surface diffusion controls intraparticle phase transformations. Nature Materials, 2018, 17, 915-922.	27.5	104
26	Fictitious phase separation in Li layered oxides driven by electro-autocatalysis. Nature Materials, 2021, 20, 991-999.	27.5	101
27	High power-density single-chamber fuel cells operated on methane. Journal of Power Sources, 2006, 162, 589-596.	7.8	94
28	Electrochemical studies of capacitance in cerium oxide thin films and its relationship to anionic and electronic defect densities. Physical Chemistry Chemical Physics, 2009, 11, 8144.	2.8	87
29	Surface electrochemistry of CO₂reduction and CO oxidation on Sm-doped CeO_{2â^'x}: coupling between Ce³⁺and carbonate adsorbates. Physical Chemistry Chemical Physics, 2015, 17, 12273-12281.	2.8	87
30	Electrochemical Kinetics of SEI Growth on Carbon Black: Part I. Experiments. Journal of the Electrochemical Society, 2019, 166, E97-E106.	2.9	85
31	Electrochemical ion insertion from the atomic to the device scale. Nature Reviews Materials, 2021, 6, 847-867.	48.7	84
32	High electrode activity of nanostructured, columnar ceria films for solid oxide fuel cells. Energy and Environmental Science, 2012, 5, 8682.	30.8	83
33	Electrochemistry of Mixed Oxygen Ion and Electron Conducting Electrodes in Solid Electrolyte Cells. Annual Review of Chemical and Biomolecular Engineering, 2012, 3, 313-341.	6.8	83
34	Ultrafine-grained Ni-rich layered cathode for advanced Li-ion batteries. Energy and Environmental Science, 2021, 14, 6616-6626.	30.8	82
35	Design Rules for High-Valent Redox in Intercalation Electrodes. Joule, 2020, 4, 1369-1397.	24.0	80
36	Effects of Particle Size, Electronic Connectivity, and Incoherent Nanoscale Domains on the Sequence of Lithiation in LiFePO₄ Porous Electrodes. Advanced Materials, 2015, 27, 6591-6597.	21.0	72

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37	Dichotomy in the Lithiation Pathway of Ellipsoidal and Platelet LiFePO₄ Particles Revealed through Nanoscale Operando Stateâ€ofâ€Charge Imaging. Advanced Functional Materials, 2015, 25, 3677-3687.	14.9	72
38	Equilibrium oxygen storage capacity of ultrathin CeO2-Î´ depends non-monotonically on large biaxial strain. Nature Communications, 2017, 8, 15360.	12.8	71
39	Interpreting Tafel behavior of consecutive electrochemical reactions through combined thermodynamic and steady state microkinetic approaches. Energy and Environmental Science, 2020, 13, 622-634.	30.8	67
40	Selective high-temperature CO2 electrolysis enabled by oxidized carbon intermediates. Nature Energy, 2019, 4, 846-855.	39.5	66
41	Electrochemical Kinetics of SEI Growth on Carbon Black: Part II. Modeling. Journal of the Electrochemical Society, 2019, 166, E107-E118.	2.9	65
42	Theory of coupled ion-electron transfer kinetics. Electrochimica Acta, 2021, 367, 137432.	5.2	64
43	Critical limitations on the efficiency of two-step thermochemical cycles. Solar Energy, 2016, 123, 57-73.	6.1	59
44	Continuous electrochemical heat engines. Energy and Environmental Science, 2018, 11, 2964-2971.	30.8	59
45	Revisiting the t^{0.5} Dependence of SEI Growth. Journal of the Electrochemical Society, 2020, 167, 090535.	2.9	54
46	Surface reaction and transport in mixed conductors with electrochemically-active surfaces: a 2-D numerical study of ceria. Physical Chemistry Chemical Physics, 2011, 13, 2121-2135.	2.8	53
47	Direct Mapping of Band Positions in Doped and Undoped Hematite during Photoelectrochemical Water Splitting. Journal of Physical Chemistry Letters, 2017, 8, 5579-5586.	4.6	53
48	Universal phase dynamics in VO ₂ switches revealed by ultrafast operando diffraction. Science, 2021, 373, 352-355.	12.6	53
49	Electrochemical behavior of ceria with selected metal electrodes. Solid State Ionics, 2008, 179, 1036-1041.	2.7	52
50	Reducing error and measurement time in impedance spectroscopy using model based optimal experimental design. Electrochimica Acta, 2011, 56, 5416-5434.	5.2	51
51	Bayesian learning for rapid prediction of lithium-ion battery-cycling protocols. Joule, 2021, 5, 3187-3203.	24.0	51
52	High-Voltage, Room-Temperature Liquid Metal Flow Battery Enabled by Na-K|K-Î²â€³-Alumina Stability. Joule, 2018, 2, 1287-1296.	24.0	48
53	Origin of Overpotential-Dependent Surface Dipole at CeO_{2â€“x}/Gas Interface During Electrochemical Oxygen Insertion Reactions. Chemistry of Materials, 2016, 28, 6233-6242.	6.7	46
54	Fingerprint Oxygen Redox Reactions in Batteries through High-Efficiency Mapping of Resonant Inelastic X-ray Scattering. Condensed Matter, 2019, 4, 5.	1.8	44

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55	Strong Catalystâ€“Support Interactions in Electrochemical Oxygen Evolution on Niâ€“Fe Layered Double Hydroxide. ACS Energy Letters, 2020, 5, 3185-3194.	17.4	44
56	Constructing a pathway for mixed ion and electron transfer reactions for O2 incorporation in Pr0.1Ce0.9O2â^'x. Nature Catalysis, 2020, 3, 116-124.	34.4	40
57	Inverse opal ceriaâ€“zirconia: architectural engineering for heterogeneous catalysis. Energy and Environmental Science, 2008, 1, 484.	30.8	37
58	Electrochemical and Chemical Insertion for Energy Transformation and Switching. Annual Review of Materials Research, 2018, 48, 137-165.	9.3	36
59	High-resolution chemical analysis on cycled LiFePO4 battery electrodes using energy-filtered transmission electron microscopy. Journal of Power Sources, 2014, 246, 512-521.	7.8	35
60	Origin and Tunability of Unusually Large Surface Capacitance in Doped Cerium Oxide Studied by Ambientâ€Pressure Xâ€Ray Photoelectron Spectroscopy. Advanced Materials, 2016, 28, 4692-4697.	21.0	34
61	Charged interfaces: electrochemical and mechanical effects. Energy and Environmental Science, 2018, 11, 1993-2000.	30.8	34
62	The Role of Metal Substitution in Tuning Anion Redox in Sodium Metal Layered Oxides Revealed by Xâ€Ray Spectroscopy and Theory. Angewandte Chemie - International Edition, 2021, 60, 10880-10887.	13.8	32
63	Thermally-enhanced minority carrier collection in hematite during photoelectrochemical water and sulfite oxidation. Journal of Materials Chemistry A, 2015, 3, 10801-10810.	10.3	29
64	Coulombically-stabilized oxygen hole polarons enable fully reversible oxygen redox. Energy and Environmental Science, 2021, 14, 4858-4867.	30.8	29
65	Modeling the impedance response of mixed-conducting thin film electrodes. Physical Chemistry Chemical Physics, 2014, 16, 11573.	2.8	28
66	Growth of Highly Strained CeO₂ Ultrathin Films. ACS Nano, 2016, 10, 9938-9947.	14.6	27
67	Correlative image learning of chemo-mechanics in phase-transforming solids. Nature Materials, 2022, 21, 547-554.	27.5	27
68	Structure and chemistry of epitaxial ceria thin films on yttria-stabilized zirconia substrates, studied by high resolution electron microscopy. Ultramicroscopy, 2017, 176, 200-211.	1.9	26
69	Unusual decrease in conductivity upon hydration in acceptor doped, microcrystalline ceria. Physical Chemistry Chemical Physics, 2011, 13, 6442.	2.8	25
70	Tracking Nonâ€Uniform Mesoscale Transport in LiFePO₄ Agglomerates During Electrochemical Cycling. ChemElectroChem, 2015, 2, 1576-1581.	3.4	24
71	A new solar fuels reactor concept based on a liquid metal heat transfer fluid: Reactor design and efficiency estimation. Solar Energy, 2015, 122, 547-561.	6.1	23
72	Electrochemical Reactivity of Faceted Î²-Co(OH)₂Single Crystal Platelet Particles in Alkaline Electrolytes. Journal of Physical Chemistry C, 2019, 123, 18783-18794.	3.1	23

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73	High-capacity thermochemical CO₂ dissociation using iron-poor ferrites. Energy and Environmental Science, 2020, 13, 592-600.	30.8	23
74	Galvanostatic Intermittent Titration Technique Reinvented: Part I. A Critical Review. Journal of the Electrochemical Society, 2021, 168, 120504.	2.9	21
75	py4DSTEM: Open Source Software for 4D-STEM Data Analysis. Microscopy and Microanalysis, 2019, 25, 124-125.	0.4	20
76	Analyzing the dependence of oxygen incorporation current density on overpotential and oxygen partial pressure in mixed conducting oxide electrodes. Physical Chemistry Chemical Physics, 2017, 19, 23414-23424.	2.8	19
77	A semiconductor/mixed ion and electron conductor heterojunction for elevated-temperature water splitting. Physical Chemistry Chemical Physics, 2013, 15, 15459.	2.8	18
78	Quantifying and Elucidating Thermally Enhanced Minority Carrier Diffusion Length Using Radius-Controlled Rutile Nanowires. Nano Letters, 2017, 17, 5264-5272.	9.1	18
79	Simple Stochastic Model of Multiparticle Battery Electrodes Undergoing Phase Transformations. Physical Review Applied, 2018, 10, .	3.8	17
80	Highly Efficient Uniaxial Inâ€Plane Stretching of a 2D Material via Ion Insertion. Advanced Materials, 2021, 33, e2101875.	21.0	16
81	Tunability of Propane Conversion over Alumina Supported Pt and Rh Catalysts. Topics in Catalysis, 2007, 46, 402-413.	2.8	12
82	Determination of the surface structure of CeO2(111) by low-energy electron diffraction. Journal of Chemical Physics, 2013, 139, 114703.	3.0	12
83	Hydroxylation and Cation Segregation in (La_{0.5}Sr_{0.5})FeO_{3â^Î´} Electrodes. Chemistry of Materials, 2020, 32, 2926-2934.	6.7	12
84	Carbonate formation lowers the electrocatalytic activity of perovskite oxides for water electrolysis. Journal of Materials Chemistry A, 2021, 9, 19940-19948.	10.3	11
85	The Role of Metal Substitution in Tuning Anion Redox in Sodium Metal Layered Oxides Revealed by Xâ€Ray Spectroscopy and Theory. Angewandte Chemie, 2021, 133, 10975-10982.	2.0	10
86	Galvanostatic Intermittent Titration Technique Reinvented: Part II. Experiments. Journal of the Electrochemical Society, 2021, 168, 120503.	2.9	10
87	Benefits of Fast Battery Formation in a Model System. Journal of the Electrochemical Society, 2021, 168, 050543.	2.9	8
88	The ionic resistance and chemical stability of polycrystalline K-Î²â€³ alumina in aqueous solutions at room temperature. Solid State Ionics, 2019, 337, 82-90.	2.7	7
89	Layer-resolved many-electron interactions in delafossite PdCoO2 from standing-wave photoemission spectroscopy. Communications Physics, 2021, 4, .	5.3	7
90	Contact Resistance of Carbonâ€“Li_x(Ni,Mn,Co)O₂ Interfaces. Advanced Energy Materials, 2022, 12, .	19.5	7

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91	Surface structure of coherently strained ceria ultrathin films. Physical Review B, 2016, 94, .	3.2	6
92	Preliminary Investigations of Chemical & Morphological Inhomogeneities in Laft6 Sro.4CoO3-Î´ Single-Crystalline Perovskite Thin Films by ACTEM and STEM-EELS. Microscopy and Microanalysis, 2015, 21, 1055-1056.	0.4	4
93	Electrode Lithiation: Effects of Particle Size, Electronic Connectivity, and Incoherent Nanoscale Domains on the Sequence of Lithiation in LiFePO₄ Porous Electrodes (Adv. Mater. 42/2015). Advanced Materials, 2015, 27, 6590-6590.	21.0	4
94	Replicating Bulk Electrochemistry in Liquid Cell Microscopy. Microscopy and Microanalysis, 2018, 24, 324-325.	0.4	4
95	Correlative analysis of structure and chemistry of LixFePO4 platelets using 4D-STEM and X-ray ptychography. Materials Today, 2022, 52, 102-111.	14.2	4
96	Publisher's Note. Ultramicroscopy, 2017, 175, 25.	1.9	3
97	Two low-expansion Li-ion cathode materials with promising multi-property performance. MRS Bulletin, 0, , 1.	3.5	2
98	Electro-chemo-mechanical charge carrier equilibrium at interfaces. Physical Chemistry Chemical Physics, 2021, 23, 23730-23740.	2.8	2
99	Thermodynamic guiding principles of high-capacity phase transformation materials for splitting H₂O and CO₂ by thermochemical looping. Journal of Materials Chemistry A, 2022, 10, 3552-3561.	10.3	2
100	Fluorescence: Dichotomy in the Lithiation Pathway of Ellipsoidal and Platelet LiFePO4Particles Revealed through Nanoscale Operando State-of-Charge Imaging (Adv. Funct. Mater. 24/2015). Advanced Functional Materials, 2015, 25, 3676-3676.	14.9	0
101	Using Energy-Filtered TEM to Solve Practical Materials Problems with Inspirations from Gareth Thomas. Microscopy and Microanalysis, 2016, 22, 1248-1249.	0.4	0
102	Operando Scanning Transmission X-ray Microscopy of Co(OH)2 Oxygen Evolution Electrocatalysts. Microscopy and Microanalysis, 2019, 25, 2094-2095.	0.4	0
103	Multi-modal Analytical Insights Into Li-Ion Battery Ageing with XFC. Microscopy and Microanalysis, 2019, 25, 2130-2131.	0.4	0
104	Tanks and Truth. ACS Nano, 2022, 16, 4975-4976.	14.6	0