Robert L Sacci

List of Publications by Year
in descending order

78 papers	2,868 citations	186265 28 h-index	175258 52 g-index
85 all docs	85 docs citations	85 times ranked	4403 citing authors

#	Article	IF	Citations
1	Demonstration of an Electrochemical Liquid Cell for Operando Transmission Electron Microscopy Observation of the Lithiation/Delithiation Behavior of Si Nanowire Battery Anodes. Nano Letters, 2013, 13, 6106-6112.	9.1	265
2	Aqueous proton transfer across single-layer graphene. Nature Communications, 2015, 6, 6539.	12.8	214
3	Nanoscale Imaging of Fundamental Li Battery Chemistry: Solid-Electrolyte Interphase Formation and Preferential Growth of Lithium Metal Nanoclusters. Nano Letters, 2015, 15, 2011-2018.	9.1	185
4	Multimodality of Structural, Electrical, and Gravimetric Responses of Intercalated MXenes to Water. ACS Nano, 2017, 11, 11118-11126.	14.6	183
5	Direct visualization of initial SEI morphology and growth kinetics during lithium deposition by in situ electrochemical transmission electron microscopy. Chemical Communications, 2014, 50, 2104.	4.1	172
6	Determination of the Solid Electrolyte Interphase Structure Grown on a Silicon Electrode Using a Fluoroethylene Carbonate Additive. Scientific Reports, 2017, 7, 6326.	3.3	157
7	Direct Determination of Solid-Electrolyte Interphase Thickness and Composition as a Function of State of Charge on a Silicon Anode. Journal of Physical Chemistry C, 2015, 119, 20339-20349.	3.1	127
8	Complexity of Intercalation in MXenes: Destabilization of Urea by Two-Dimensional Titanium Carbide. Journal of the American Chemical Society, 2018, 140, 10305-10314.	13.7	93
9	Deposition and Confinement of Li Metal along an Artificial Liponâ€“Lipon Interface. ACS Energy Letters, 2019, 4, 651-655.	17.4	87
10	Elucidating effects of cell architecture, electrode material, and solution composition on overpotentials in redox flow batteries. Electrochimica Acta, 2017, 229, 261-270.	5.2	85
11	Direct Visualization of Solid Electrolyte Interphase Formation in Lithium-Ion Batteries with In Situ Electrochemical Transmission Electron Microscopy. Microscopy and Microanalysis, 2014, 20, 1029-1037.	0.4	83
12	Quantitative Electrochemical Measurements Using In Situ ec-S/TEM Devices. Microscopy and Microanalysis, 2014, 20, 452-461.	0.4	80
13	Evaluating the solid electrolyte interphase formed on silicon electrodes: a comparison of ex situ X-ray photoelectron spectroscopy and in situ neutron reflectometry. Physical Chemistry Chemical Physics, 2016, 18, 13927-13940.	2.8	80
14	Scalable Screening of Soft Matter: A Case Study of Mixtures of Ionic Liquids and Organic Solvents. Journal of Physical Chemistry B, 2019, 123, 1340-1347.	2.6	58
15	Direct measurement of the chemical reactivity of silicon electrodes with LiPF6-based battery electrolytes. Chemical Communications, 2014, 50, 3081.	4.1	56
16	Pre-Sodiated Ti₃C₂T_x MXene Structure and Behavior as Electrode for Sodium-Ion Capacitors. ACS Nano, 2021, 15, 2994-3003.	14.6	54
17	Evaluation of Gas Formation and Consumption Driven by Crossover Effect in High-Voltage Lithium-Ion Batteries with Ni-Rich NMC Cathodes. ACS Applied Materials & Interfaces, 2019, 11, 43235-43243.	8.0	50
18	Accelerating Membraneâ€based CO₂ Separation by Soluble Nanoporous Polymer Networks Produced by Mechanochemical Oxidative Coupling. Angewandte Chemie - International Edition, 2018, 57, 2816-2821.	13.8	44

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19	The Study of the Binder Poly(acrylic acid) and Its Role in Concomitant Solidâ€“Electrolyte Interphase Formation on Si Anodes. ACS Applied Materials & Interfaces, 2020, 12, 10018-10030.	8.0	44
20	Dynamic electrochemical impedance spectroscopy, for electrocatalytic reactions. Electrochimica Acta, 2014, 131, 13-19.	5.2	42
21	Solid-State Synthesis of Conjugated Nanoporous Polycarbazoles. ACS Macro Letters, 2017, 6, 1056-1059.	4.8	42
22	Structural Dynamics and Evolution of Bismuth Electrodes during Electrochemical Reduction of CO₂ in Imidazolium-Based Ionic Liquid Solutions. ACS Catalysis, 2017, 7, 7285-7295.	11.2	41
23	Elucidating Interfacial Stability between Lithium Metal Anode and Li Phosphorus Oxynitride via In Situ Electron Microscopy. Nano Letters, 2021, 21, 151-157.	9.1	36
24	Superacid-promoted synthesis of highly porous hypercrosslinked polycarbazoles for efficient CO₂ capture. Chemical Communications, 2017, 53, 7645-7648.	4.1	32
25	Critical Role of Anionâ€“Solvent Interactions for Dynamics of Solvent-in-Salt Solutions. Journal of Physical Chemistry C, 2020, 124, 8457-8466.	3.1	32
26	Study of segmental dynamics and ion transport in polymerâ€“ceramic composite electrolytes by quasi-elastic neutron scattering. Molecular Systems Design and Engineering, 2019, 4, 379-385.	3.4	31
27	Dynamic Electrochemical Impedance Spectroscopy. ECS Transactions, 2009, 19, 31-42.	0.5	29
28	Structure of Spontaneously Formed Solid-Electrolyte Interphase on Lithiated Graphite Determined Using Small-Angle Neutron Scattering. Journal of Physical Chemistry C, 2015, 119, 9816-9823.	3.1	28
29	Insight into the Mechanisms Driving the Self-Assembly of Functional Interfaces: Moving from Lipids to Charged Amphiphilic Oligomers. Journal of the American Chemical Society, 2020, 142, 290-299.	13.7	27
30	Probing battery chemistry with liquid cell electron energy loss spectroscopy. Chemical Communications, 2015, 51, 16377-16380.	4.1	25
31	Intrinsic Chemical Reactivity of Silicon Electrode Materials: Gas Evolution. Chemistry of Materials, 2020, 32, 3199-3210.	6.7	23
32	Operando NMR and XRD study of chemically synthesized LiC oxidation in a dry room environment. Journal of Power Sources, 2015, 287, 253-260.	7.8	22
33	Energetics of Na⁺Transport through the Electrode/Cathode Interface in Single Solvent Electrolytes. Journal of the Electrochemical Society, 2017, 164, A580-A586.	2.9	21
34	A new approach to vibrational sum frequency generation spectroscopy using near infrared pulse shaping. Review of Scientific Instruments, 2019, 90, 033106.	1.3	20
35	Phase evolution during lithiumâ€“indium halide superionic conductor dehydration. Journal of Materials Chemistry A, 2021, 9, 990-996.	10.3	19
36	Diffusivity and Structure of Room Temperature Ionic Liquid in Various Organic Solvents. Journal of Physical Chemistry B, 2020, 124, 9931-9937.	2.6	18

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37	Ionic Conductivity Enhancement of Polymer Electrolytes by Directed Crystallization. ACS Macro Letters, 2022, 11, 595-602.	4.8	16
38	Dry Synthesis of Lithium Intercalated Graphite Powder and Fiber. Journal of the Electrochemical Society, 2014, 161, A614-A619.	2.9	15
39	Lithium Transport in an Amorphous Li_xSi Anode Investigated by Quasi-elastic Neutron Scattering. Journal of Physical Chemistry C, 2017, 121, 11083-11088.	3.1	15
40	Electroanalytical Measurement of Interphase Formation at a Li Metalâ€“Solid Electrolyte Interface. ACS Energy Letters, 2020, 5, 3860-3867.	17.4	14
41	Predictive Design of Shear-Thickening Electrolytes for Safety Considerations. Journal of the Electrochemical Society, 2017, 164, A2547-A2551.	2.9	13
42	Elucidating mechanisms of oxide growth and surface passivation on zinc thin film electrodes in alkaline solutions using the electrochemical quartz crystal microbalance. Journal of Power Sources, 2019, 438, 227034.	7.8	13
43	A Molecular-Scale Approach to Rare-Earth Beneficiation: Thinking Small to Avoid Large Losses. IScience, 2020, 23, 101435.	4.1	13
44	Ion Pairing Mediates Molecular Organization Across Liquid/Liquid Interfaces. ACS Applied Materials & Interfaces, 2021, 13, 33734-33743.	8.0	13
45	Understanding Self-Assembly and the Stabilization of Liquid/Liquid Interfaces: The Importance of Ligand Tail Branching and Oil-Phase Solvation. Journal of Colloid and Interface Science, 2022, 609, 807-814.	9.4	13
46	Ion Pairing and Molecular Orientation at Liquid/Liquid Interfaces: Self-Assembly and Function. Journal of Physical Chemistry B, 2022, 126, 2316-2323.	2.6	12
47	Accelerating Membraneâ€based CO₂ Separation by Soluble Nanoporous Polymer Networks Produced by Mechanochemical Oxidative Coupling. Angewandte Chemie, 2018, 130, 2866-2871.	2.0	10
48	Evaluating the roles of electrolyte components on the passivation of silicon anodes. Journal of Power Sources, 2022, 523, 231021.	7.8	10
49	Disentangling Memristive and Memcapacitive Effects in Droplet Interface Bilayers Using Dynamic Impedance Spectroscopy. Advanced Electronic Materials, 2022, 8, .	5.1	9
50	Study of the Segmental Dynamics and Ion Transport of Solid Polymer Electrolytes in the Semi-crystalline State. Frontiers in Chemistry, 2020, 8, 592604.	3.6	8
51	Addition of Chloroform in a Solvent-in-Salt Electrolyte: Outcomes in the Microscopic Dynamics in Bulk and Confinement. Journal of Physical Chemistry C, 2020, 124, 22366-22375.	3.1	7
52	La₂Zr₂O₇ Nanoparticle-Mediated Synthesis of Porous Al-Doped Li₇La₃Zr₂O₁₂ Garnet. Inorganic Chemistry, 2021, 60, 10012-10021.	4.0	7
53	Squeezing Out Interfacial Solvation: The Role of Hydrogen-Bonding in the Structural and Orientational Freedom of Molecular Self-Assembly. Journal of Physical Chemistry Letters, 2022, 13, 2273-2280.	4.6	7
54	A study of perfluorocarboxylate ester solvents for lithium ion battery electrolytes. Journal of Power Sources, 2015, 299, 434-442.	7.8	6

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55	Role of Pairwise Reactions on the Synthesis of Li_{0.3}La_{0.57}TiO₃ and the Resulting Structureâ€“Property Correlations. Inorganic Chemistry, 2021, 60, 14831-14843.	4.0	6
56	Beyond Simple Dilution: Superior Conductivities from Cosolvation of Acetonitrile/LiTFSI Concentrated Solution with Acetone. Journal of Physical Chemistry C, 2022, 126, 2788-2796.	3.1	6
57	Improving Rare-Earth Mineral Separation with Insights from Molecular Recognition: Functionalized Hydroxamic Acid Adsorption onto BastnÃsite and Calcite. Langmuir, 2022, 38, 5439-5453.	3.5	6
58	Dynamic Impedance of Formic Acid Electrooxidation on Polycrystalline Palladium. ECS Transactions, 2009, 19, 123-129.	0.5	5
59	Exploiting the Oxygen Redox Reaction and Crystal-Preferred Orientation in a P3-Type Na_{2/3}Mg_{1/3}Mn_{2/3}O₂ Thin-Film Electrode. Energy & Fuels, 2020, 34, 7692-7699.	5.1	5
60	Smooth Modified Surfaces of Silicon for the Study of Ionic Liquid Interfaces by Neutron Reflectometry. ACS Applied Electronic Materials, 2022, 4, 2217-2226.	4.3	5
61	Mechanistic Insights of Pore Contributions in Carbon Supercapacitors by Modified Step Potential Electrochemical Spectroscopy. Journal of the Electrochemical Society, 2021, 168, 060530.	2.9	4
62	Anion Coordination Improves High-Temperature Performance and Stability of NaPF6-Based Electrolytes for Supercapacitors. Energies, 2021, 14, 4409.	3.1	4
63	Egyptian blue: from pigment to battery electrodes. RSC Advances, 2021, 11, 19885-19889.	3.6	3
64	Structure and dynamics of small polyimide oligomers with silicon as a function of aging. Soft Matter, 2021, 17, 7729-7742.	2.7	3
65	Structural analyses of amorphous calcium carbonate before and after removing strontium ions from an aqueous solution. Journal of the Ceramic Society of Japan, 2022, 130, 225-231.	1.1	3
66	In situ Electrochemical TEM for Quantitative Nanoscale Imaging Dynamics of Solid Electrolyte Interphase and Lithium Electrodeposition. Microscopy and Microanalysis, 2015, 21, 2437-2438.	0.4	2
67	Modulation of Cation Diffusion by Reversible Supramolecular Assemblies in Ionic Liquid-Based Nanocomposites. ACS Applied Materials & Interfaces, 2020, 12, 31842-31851.	8.0	2
68	Interfacial acidity on the strontium titanate surface: a scaling paradigm and the role of the hydrogen bond. Physical Chemistry Chemical Physics, 2021, 23, 23478-23485.	2.8	2
69	Tuning Electrodeposition Parameters for Tailored Nanoparticle Size, Shape, and Morphology: An In Situ ec-STEM Investigation. Microscopy and Microanalysis, 2014, 20, 1506-1507.	0.4	1
70	In operando Transmission Electron Microscopy Imaging of SEI Formation and Structure in Li-Ion and Li-Metal Batteries. Microscopy and Microanalysis, 2014, 20, 1538-1539.	0.4	1
71	In situ Nanoscale Imaging and Spectroscopy of Energy Storage Materials. Microscopy and Microanalysis, 2017, 23, 1964-1965.	0.4	0
72	Reply to the â€œComment on â€˜Critical Role of Anionâ€“Solvent Interactions for Dynamics of Solvent-in-Salt Solutionsâ€™â€•. Journal of Physical Chemistry C, 2021, 125, 9585-9586.	3.1	0

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73	In Situ Neutron and Impedance Analysis of the Phase Evolution during Lithium-Indium Chloride Dehydration. ECS Meeting Abstracts, 2021, MA2021-02, 1493-1493.	0.0	0
74	Probing Slurry and Electrode Architecture of Silicon Anodes Processed with Oligomeric Polyimide Binder Under Electrode Coating Conditions. ECS Meeting Abstracts, 2021, MA2021-02, 476-476.	0.0	0
75	In Situ Neutron Scattering to Elucidate the Mechanism of Rapid Lithium Ion-Conducting Garnet Synthesis Using Nanoparticles. ECS Meeting Abstracts, 2020, MA2020-02, 986-986.	0.0	0
76	Electroanalytical Characterization of the Interphase between the Solid Electrolyte Lipon and Li Metal. ECS Meeting Abstracts, 2020, MA2020-02, 1025-1025.	0.0	0
77	Impedance-Resolved Electrochemical Performance of Treated Carbon Felt Electrodes in Vanadium Redox Flow Batteries: Model Error Estimation. ECS Meeting Abstracts, 2020, MA2020-02, 1034-1034.	0.0	0
78	Using Dynamic Impedance Spectroscopy to Deconvolute Memory Elements in Droplet Interface Bilayers. ECS Meeting Abstracts, 2022, MA2022-01, 2123-2123.	0.0	0