

Robert J Messinger

List of Publications by Year in descending order

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53
papers

2,246
citations

471509

17
h-index

501196

28
g-index

54
all docs

54
docs citations

54
times ranked

3810
citing authors

#	ARTICLE	IF	CITATIONS
1	Making it stick: convection, reaction and diffusion in surface-based biosensors. <i>Nature Biotechnology</i> , 2008, 26, 417-426.	17.5	819
2	Directing Zeolite Structures into Hierarchically Nanoporous Architectures. <i>Science</i> , 2011, 333, 328-332.	12.6	750
3	Disentangling faradaic, pseudocapacitive, and capacitive charge storage: A tutorial for the characterization of batteries, supercapacitors, and hybrid systems. <i>Electrochimica Acta</i> , 2022, 412, 140072.	5.2	78
4	Topological, Geometric, and Chemical Order in Materials: Insights from Solid-State NMR. <i>Accounts of Chemical Research</i> , 2013, 46, 1975-1984.	15.6	60
5	Suppression of Electro-Osmotic Flow by Surface Roughness. <i>Physical Review Letters</i> , 2010, 105, 144503.	7.8	54
6	Understanding and Controlling Organic-Inorganic Interfaces in Mesostructured Hybrid Photovoltaic Materials. <i>Journal of the American Chemical Society</i> , 2011, 133, 10119-10133.	13.7	54
7	Synthesis and Electrochemical Performance of the Orthorhombic $\text{Li}_2\text{Fe}(\text{SO}_4)_2$ Polymorph for Li-Ion Batteries. <i>Chemistry of Materials</i> , 2014, 26, 4178-4189.	6.7	53
8	Revealing Defects in Crystalline Lithium-Ion Battery Electrodes by Solid-State NMR: Applications to LiVPO_4F . <i>Chemistry of Materials</i> , 2015, 27, 5212-5221.	6.7	47
9	Co-development of Crystalline and Mesoscopic Order in Mesostructured Zeolite Nanosheets. <i>Angewandte Chemie - International Edition</i> , 2015, 54, 927-931.	13.8	40
10	Understanding Local Defects in Li-Ion Battery Electrodes through Combined DFT/NMR Studies: Application to LiVPO_4F . <i>Journal of Physical Chemistry C</i> , 2017, 121, 3219-3227.	3.1	37
11	Materials Compatibility in Rechargeable Aluminum Batteries: Chemical and Electrochemical Properties between Vanadium Pentoxide and Chloroaluminate Ionic Liquids. <i>Chemistry of Materials</i> , 2019, 31, 7238-7247.	6.7	35
12	Effects of Graphite Structure and Ion Transport on the Electrochemical Properties of Rechargeable Aluminum-Graphite Batteries. <i>ACS Applied Energy Materials</i> , 2019, 2, 7799-7810.	5.1	30
13	Quantitative Molecular-Level Understanding of Electrochemical Aluminum-Ion Intercalation into a Crystalline Battery Electrode. <i>ACS Energy Letters</i> , 2020, 5, 2842-2848.	17.4	27
14	Molecular Origins of Macroscopic Mechanical Properties of Elastomeric Organosiloxane Foams. <i>Macromolecules</i> , 2015, 48, 4835-4849.	4.8	20
15	Electroactive ZnO: Mechanisms, Conductivity, and Advances in Zn Alkaline Battery Cycling. <i>Advanced Energy Materials</i> , 2022, 12, .	19.5	20
16	Increasing the detection speed of an all-electronic real-time biosensor. <i>Lab on A Chip</i> , 2012, 12, 954.	6.0	18
17	Non-Topotactic Transformation of Silicate Nanolayers into Mesostructured MFI Zeolite Frameworks During Crystallization. <i>Angewandte Chemie - International Edition</i> , 2017, 56, 5164-5169.	13.8	17
18	Correlated Diffusivities, Solubilities, and Hydrophobic Interactions in Ternary Polydimethylsiloxane-Water-Tetrahydrofuran Mixtures. <i>Macromolecules</i> , 2016, 49, 6910-6917.	4.8	14

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19	Tunable Pseudocapacitive Intercalation of Chloroaluminate Anions into Graphite Electrodes for Rechargeable Aluminum Batteries. <i>Journal of the Electrochemical Society</i> , 2021, 168, 060514.	2.9	13
20	Molecular-level environments of intercalated chloroaluminate anions in rechargeable aluminum-graphite batteries revealed by solid-state NMR spectroscopy. <i>Journal of Materials Chemistry A</i> , 2020, 8, 16006-16017.	10.3	12
21	Restricted lithium ion dynamics in PEO-based block copolymer electrolytes measured by high-field nuclear magnetic resonance relaxation. <i>Journal of Chemical Physics</i> , 2017, 147, 134902.	3.0	11
22	Soluble Electrolyte-Coordinated Sulfide Species Revealed in Al ⁺ S Batteries by Nuclear Magnetic Resonance Spectroscopy. <i>Chemistry of Materials</i> , 2022, 34, 4486-4495.	6.7	10
23	Co ⁺ development of Crystalline and Mesoscopic Order in Mesostructured Zeolite Nanosheets. <i>Angewandte Chemie</i> , 2015, 127, 941-945.	2.0	9
24	Magic ⁺ angle ⁺ spinning ⁺ induced local ordering in polymer electrolytes and its effects on solid ⁺ state diffusion and relaxation NMR measurements. <i>Magnetic Resonance in Chemistry</i> , 2020, 58, 1118-1129.	1.9	6
25	Interplay between coordination, dynamics, and conductivity mechanism in Mg/Al-catenated ionic liquid electrolytes. <i>Journal of Power Sources</i> , 2022, 524, 231084.	7.8	6
26	Non ⁺ topotactic Transformation of Silicate Nanolayers into Mesostructured MFI Zeolite Frameworks During Crystallization. <i>Angewandte Chemie</i> , 2017, 129, 5246-5251.	2.0	3
27	Conductive Polymers As Hybrid Battery-Capacitor Electrode Materials. <i>ECS Meeting Abstracts</i> , 2020, MA2020-02, 336-336.	0.0	2
28	(Invited) Molecular-Level Understanding of Ion Intercalation Mechanisms in Aluminum and Zinc Battery Electrodes Revealed By Solid-State NMR Spectroscopy. <i>ECS Meeting Abstracts</i> , 2019, , .	0.0	1
29	(Invited) Effect of Ion Coordination on the Long-Range Charge Migration Processes in Ionic Liquid-Based Hybrid Al/Mg Batteries. <i>ECS Meeting Abstracts</i> , 2021, MA2021-01, 422-422.	0.0	0
30	Correlating Molecular-Level Environments of Chloroaluminate Species with Electrochemical Behavior in Rechargeable Aluminum-Graphite Batteries. <i>ECS Meeting Abstracts</i> , 2018, , .	0.0	0
31	Failure Analysis of the Rechargeable Porous Zinc Electrode in Alkaline Electrolyte. <i>ECS Meeting Abstracts</i> , 2018, , .	0.0	0
32	Cathode Materials for Rechargeable Aluminum Metal Batteries: Molecular-Level Insights, Challenges, & Opportunities. <i>ECS Meeting Abstracts</i> , 2018, , .	0.0	0
33	Molecular-Scale Insights of Aluminum-Ion Intercalation into Chevrel Phase Mo ₆ S ₈ . <i>ECS Meeting Abstracts</i> , 2018, , .	0.0	0
34	Real-Time Identification and Understanding of Zinc Compounds in Rechargeable Zinc-Alkaline Electrodes. <i>ECS Meeting Abstracts</i> , 2019, , .	0.0	0
35	Investigating the Dynamic Behavior of Zinc Oxide Discharge Product in Rechargeable Zinc Electrodes. <i>ECS Meeting Abstracts</i> , 2019, , .	0.0	0
36	Failure Analysis of the Rechargeable Porous Zinc Electrode in Alkaline Electrolyte. <i>ECS Meeting Abstracts</i> , 2019, , .	0.0	0

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37	Discharge Reactions of $\hat{\Gamma}^3$ -MnO ₂ and Mo ₆ S ₈ Tracked in the Electrode Bulk of Sealed Devices By Energy Dispersive X-Ray Diffraction (EDXRD). ECS Meeting Abstracts, 2019, , .	0.0	0
38	Failure Analysis of the Rechargeable Porous Zinc Electrode in Alkaline Electrolyte. ECS Meeting Abstracts, 2019, , .	0.0	0
39	Tuning Ion Diffusivity and High-Rate Cycling Performance Via Graphite Exfoliation for Rechargeable Aluminum-Graphite Batteries. ECS Meeting Abstracts, 2020, MA2020-01, 2900-2900.	0.0	0
40	A Mechanistic Understanding of the Electrochemical Activity of Zinc Oxide in Alkaline Batteries. ECS Meeting Abstracts, 2020, MA2020-01, 574-574.	0.0	0
41	Elucidating Aluminum-Ion Intercalation and Its Effects on the Local Crystalline Framework Using Solid-State NMR Spectroscopy. ECS Meeting Abstracts, 2020, MA2020-01, 2866-2866.	0.0	0
42	Molecular-Scale Understanding of Charge Storage Mechanisms in Positive Electrode Materials for Rechargeable Aluminum Metal Batteries. ECS Meeting Abstracts, 2020, MA2020-01, 211-211.	0.0	0
43	Rechargeable Aluminum-chalcogen Batteries: Molecular-Level Mechanistic Insights & Scientific Perspectives. ECS Meeting Abstracts, 2021, MA2021-02, 6-6.	0.0	0
44	Towards Rechargeable Aluminum-Ionic Liquid Batteries for Low-Temperature Space Applications. ECS Meeting Abstracts, 2021, MA2021-02, 1761-1761.	0.0	0
45	The Effect of Additives on the Performance and Failure Mechanisms of the Rechargeable, Low-Cost, Alkaline Zinc Electrode. ECS Meeting Abstracts, 2020, MA2020-02, 1042-1042.	0.0	0
46	Understanding Electrochemical Reaction Mechanisms and Properties of Rechargeable Aluminum-Sulfur and Aluminum-Selenium Batteries. ECS Meeting Abstracts, 2020, MA2020-02, 379-379.	0.0	0
47	Molecular-Level to Cell-Level Understanding of the High-Rate Cycling Capability of Rechargeable Aluminum-Graphite Batteries. ECS Meeting Abstracts, 2020, MA2020-02, 561-561.	0.0	0
48	Electrochemical Control and Understanding of the Electronic and Optical Properties of ZnO Formed in Rechargeable Zn-Alkaline Batteries. ECS Meeting Abstracts, 2020, MA2020-02, 177-177.	0.0	0
49	Elucidating Reversible Electrochemical Anionic Redox in Intercalation Electrodes for Rechargeable Multivalent-Ion Batteries. ECS Meeting Abstracts, 2020, MA2020-02, 121-121.	0.0	0
50	Electrochemical Performance and Charge Storage Mechanism of Flavin-like Organic Electrodes for Rechargeable Aluminum Batteries. ECS Meeting Abstracts, 2020, MA2020-02, 3488-3488.	0.0	0
51	Electrochemical Evaluation of the Application of Hydrogel Electrolytes to Rechargeable Zn MnO ₂ Alkaline Batteries. ECS Meeting Abstracts, 2020, MA2020-02, 751-751.	0.0	0
52	Towards Realizing High-Voltage Aqueous Zinc Batteries: An Investigation of the Zinc Anode in Concentrated Acetate-Based Electrolytes. ECS Meeting Abstracts, 2021, MA2021-02, 1683-1683.	0.0	0
53	Electrochemical Complexation of Polyatomic Aluminum Cations in Quinone-Type Organic Battery Electrodes Revealed By Solid-State NMR. ECS Meeting Abstracts, 2021, MA2021-02, 1685-1685.	0.0	0