Curated Research Articles

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- **Deriving Stable SEI Layer and Preventing Aluminum Current Collector Corrosion via Preferential Decomposition of Concentrated Lithium Salt for Lithium-Ion Batteries** — score: 1.000 The article presents a novel strategy using a spatially confined electrolyte system in lithium-ion batteries, combining concentrated lithium bis(trifluoromethanesulfonyl)imide (LiTFSI) within a polymer matrix to develop a stable solid-electrolyte interphase (SEI) and enhance cycling stability. This method effectively prevents aluminum current collector corrosion by allowing targeted decomposition of LiTFSI at the anode, while the bulk electrolyte remains composed of lithium hexafluorophosphate (LiPF6). As a result, the batteries exhibit impressive capacity retention during high-performance cycling, highlighting a scalable approach for future electrolyte designs. Journal: *Wiley: Advanced Energy Materials: Table of Contents*
- **Solid Electrolyte Interphase Stabilized Pomegranate SnP2O7@PC Anodes Realized Through Kirkendall Effect of MOF for Durable Potassium/Sodium-Ion Batteries** — score: 1.000 The study presents a novel pomegranate-inspired SnP2O7@PC anode synthesized using Kirkendall effect-driven pyrolysis of a MOF, effectively enhancing potassium- and sodium-ion battery stability. This multi-scale architecture reduces ion diffusion barriers and accommodates volume expansion, resulting in exceptional cycling performance with a minimal capacity decay of 0.0015% over 16,000 cycles. Journal: *Wiley: Advanced Energy Materials: Table of Contents*
- **Decoupling Electrolyte Degradation Pathways With Diverse Li Plating Processes on Graphite Electrodes** — score: 1.000 The study investigates lithium plating on graphite anodes in lithium-ion batteries, specifically distinguishing between its impacts under controlled overcharge and practical fast-charging conditions. By analyzing the degradation pathways of various electrolyte components through advanced techniques like NMR and GC-MS, the research identifies distinct mechanisms of electrolyte loss and solid-electrolyte interphase formation, ultimately guiding the design of safer and longer-lasting batteries. Journal: *Wiley: Advanced Energy Materials: Table of Contents*
- **In Situ TEM Reveals the Hard Carbon Sodium Storage Mechanism and Discovers the Sodium Carbide** — score: 1.000 This study investigates the sodium storage mechanism in hard carbon anodes for sodium-ion batteries, utilizing lignin as a precursor to create microstructures with cavity-rich features. Through in situ TEM and GITT, the researchers confirmed that the unique microstructure facilitates Na+ storage and the formation of a new sodium carbide phase (C32Na), highlighting the potential for improved battery performance and biomass utilization. Journal: *Wiley: Advanced Energy Materials: Table of Contents*
- **Interface Engineering for Heightening Anionic Redox Reversibility of Li-Rich Layered Oxides Cathodes: Recent Advances and Perspectives** — score: 1.000 This review article discusses the potential of lithium-rich manganese-based layered oxides (LRMOs) for high-energy-density lithium-ion batteries, emphasizing their challenges such as interfacial instability. It highlights recent advancements in interface engineering strategies that enhance the reversibility of oxygen redox reactions and examines various mechanisms impacting battery performance, ultimately offering insights for future designs of LRMO cathodes. Journal: *Wiley: Advanced Energy Materials: Table of Contents*
- **[ASAP] Mechanistic Insight into Solid Electrolyte Interphase Interactions for Sodium Metal Electrodes** — score: 1.000 The article analyzes the interactions at the solid electrolyte interphase for sodium metal electrodes, providing insights into the mechanisms that govern their performance. Understanding these interactions is crucial for optimizing sodium metal batteries and improving their efficiency and longevity. Journal: *ACS Applied Energy Materials: Latest Articles (ACS Publications)*
- **Enhanced Fast-Charging Performance of High-Mass-Loading Mn-Rich Li[Mn1-xFex]PO4 Cathodes via LiF-Less Cathode–Electrolyte Interphase** — score: 1.000 This study addresses the performance limitations of Mn-rich Li[Mn1-xFex]PO4 (LMFP) cathodes in lithium-ion batteries under high-mass-loading conditions, revealing that the insulating LiF buildup at the cathode-electrolyte

interphase (CEI) hinders charge transfer. By employing a strategy to suppress LiF formation, the authors achieve a notable 1.6-fold increase in capacity at fast charging rates, alongside significant retention after 100 cycles, demonstrating the effectiveness of CEI engineering in enhancing battery performance. Journal: *Wiley: Advanced Energy Materials: Table of Contents*

- **Double-Coordination Additives Induced High-Entropy SEI for Stable Anode-Less Sodium Metal Batteries** — score: 0.900 The article introduces a novel double-coordination electrolyte strategy that enhances the formation of a high-entropy, inorganic-rich solid electrolyte interphase (SEI) in anode-less sodium metal batteries. By utilizing additives like benzimidazole and zinc trifluoromethanesulfonate, the approach achieves ultra-thin, robust SEI facilitating efficient sodium deposition, resulting in exceptional Coulombic efficiency and a high energy density of 327.54 Wh kg−1. Journal: *Wiley: Advanced Energy Materials: Table of Contents*
- **Geometric Remodeling of Silicon Crystal Structure Through Atomic-Level Fluorine Incorporation for High-Performance Lithium-Ion Batteries** — score: 0.800 This article presents a new method for synthesizing fluorine-incorporated silicon (FIS) nanostructures, which enhances the geometric properties of silicon crystals and improves their electrochemical performance in lithium-ion batteries. The incorporation of fluorine not only optimizes charge transport and stability through modified band structure and enhanced ion migration pathways but also enables cost-effective manufacturing processes with superhydrophobic characteristics, ultimately supporting fast-charging and durable silicon anodes. Journal: *Wiley: Advanced Energy Materials: Table of Contents*
- **Constructing Integrated Dual-Skin-Layer Porous Membranes via a Bottom-Up Phase Inversion Relay Strategy for Flow Batteries** — score: 0.800 This research introduces a novel bottom-up relay phase inversion method to create integrated dual-skin-layer porous membranes for flow batteries, featuring a central macropore layer enveloped by two skin layers. By optimizing pore structures and enhancing protection against fouling and mechanical damage, the membrane significantly improves battery efficiency and stability, achieving over 6000 cycles at high current density with approximately 83.6% energy efficiency. Journal: *Wiley: Advanced Energy Materials: Table of Contents*
- **[ASAP] The Heterogeneous Charge Transfer Mechanism in Lithium Metal Batteries: Revealing Abnormal Lithiophilicity through the Marcus Theory** — score: 0.800 The article explores the complex charge transfer mechanisms in lithium metal batteries, focusing on unusual lithiophilicity phenomena. By employing Marcus theory, the study reveals key insights into how these mechanisms impact battery performance and efficiency. Journal: *Journal of the American Chemical Society: Latest Articles (ACS Publications)*
- **How Particle Size Affects Consolidation Behavior, Strain and Properties of Li6PS5Cl Fast Ionic Conductors** — score: 0.800 The study investigates how particle size distribution affects the densification and strain behavior of Li6PS5Cl fast ionic conductors during solid-state battery fabrication. It finds that smaller particle sizes lead to greater compressibility and higher lattice strain due to inhomogeneities rather than particle size alone, emphasizing the importance of size distribution in the processing of solid electrolytes. Journal: *Wiley: Advanced Energy Materials: Table of Contents*
- **Harnessing Temperature-Mediated Strain Management to Realize Ultra-Stable Oxide Cathodes in Na-Ion Batteries** — score: 0.800 The study presents a novel strategy for enhancing the stability of O3-type oxide cathodes in sodium-ion batteries by using temperature control to manage strain. This approach improves structural integrity and reversibility of phase transitions, leading to reduced degradation and improved cycling performance, thereby advancing the practicality of Na-ion batteries for energy storage applications. Journal: *Wiley: Advanced Energy Materials: Table of Contents*
- **Thermal Decomposition Pathways and Interfacial Reactivity in Potassium-Ion Batteries: Focus on Electrolyte and Anode** — score: 0.800 This article explores the thermal decomposition pathways and interfacial reactivity of electrolytes and anodes in potassium-ion batteries, positioning these batteries as a viable alternative to lithium-ion technology due to their resource abundance and

compatibility with graphite anodes. The study highlights the importance of understanding thermal safety mechanisms to improve the overall performance and reliability of potassium-ion batteries. Journal: *RSC - Energy Environ. Sci. latest articles*

- **Impact of Discharging Methods on Electrode Integrity in Recycling of Lithium-Ion Batteries** — score: 0.800 The article investigates the effects of electrical versus electrochemical discharge methods on the integrity of electrode materials in lithium-ion batteries during recycling. It reveals that electrochemical discharge better preserves the composition and layered structure of Ni-rich cathodes, while minimizing unwanted lithium compounds, thus supporting its role as a promising preprocessing strategy for sustainable battery recycling. Journal: *Wiley: Advanced Energy Materials: Table of Contents*
- **Rational Design of Cellulose-Based Gel Electrolytes for Next-Generation Zinc-Ion Batteries: Mechanisms, Advances, and Perspectives** — score: 0.800 This review article discusses the advances in cellulose-based gel electrolytes (CGEs) for enhancing the performance of zinc-ion batteries (ZIBs). It highlights their role in suppressing dendrite formation, stabilizing interfaces, and improving the durability and environmental sustainability of these batteries, while providing insights into the latest CGE preparation methods and potential future research directions. Journal: *Wiley: Advanced Energy Materials: Table of Contents*
- **Self-Assembled Molecular Capsule via Metastable Soft Interface for Stable Aqueous Batteries** — score: 0.800 This research presents a self-assembled molecular capsule utilizing amphiphilic Pluronic F127 to stabilize organic redox materials in aqueous battery systems. By forming a resilient, ion-permeable interface on hydrophobic particles, the capsule enhances cycling stability and efficiency, achieving impressive performance metrics after extensive testing. This approach offers a novel method for improving the durability of organic materials in energy storage applications. Journal: *Wiley: Advanced Energy Materials: Table of Contents*
- **[ASAP] Interparticle Communication and Lithium Dynamics in Faceted Nickel-Rich NMC Cathodes** — score: 0.800 The article investigates the mechanisms of interparticle communication and lithium ion dynamics within nickel-rich NMC cathodes, emphasizing how these interactions affect battery performance. The findings highlight the importance of understanding these processes to enhance the efficiency and longevity of lithium-ion batteries. Journal: *Journal of the American Chemical Society: Latest Articles (ACS Publications)*
- **Unveiling the mechanism of lithium-mediated nitrogen reduction via operando X-ray scattering in a flow cell with hydrogen oxidation** — score: 0.800 The study employs operando GIWAXS to investigate lithium-mediated nitrogen reduction (Li-NRR) in a flow cell, identifying lithium amide (LiNH2) as the sole stable crystalline intermediate. It also highlights the role of a unique solid electrolyte interphase (SEI) formed by diglyme electrolytes in this reaction process. Journal: *RSC - Energy Environ. Sci. latest articles*
- **Calendering-induced interfacial reconfiguration enables electrochemical activation in lithium metal powder electrodes for high-energy-density batteries** — score: 0.800 This study explores how calendering processes promote structural transformations in lithium metal powder electrodes, leading to enhanced electrical connectivity and increased electrochemically active lithium. The findings suggest that these interactions can significantly improve the performance of high-energy-density batteries. Journal: *RSC - EES Batteries latest articles*
- **A Mineral-Biopolymer Synergistic Quasi-Solid-State Electrolyte for Long-Lasting Zinc Metal Batteries** — score: 0.800 The DLM@SA@Zn composite electrolyte, created from sodium alginate and dolomite, enhances zinc metal battery performance with high ionic conductivity and structural stability, promoting uniform zinc deposition and reducing iodine dissolution. Demonstrating significant cycle life with over 82% capacity retention after 22,000 cycles and impressive charge retention in different cell configurations, this electrolyte showcases its potential for advancing zinc metal battery technologies. Journal: *Wiley: Advanced Energy Materials: Table of Contents*
- **Potassium-Ion Battery Anodes: Mechanistic Frameworks, Electrolyte/Binder Integra-**

tion, and Roadmap Toward Commercialization — score: 0.800 The article reviews potassium-ion batteries (KIBs) as a promising alternative to lithium and sodium systems, emphasizing their benefits such as abundance, low cost, and unique electrochemical properties. It categorizes KIB anodes into five classes, examines the influence of electrolytes and binders on battery performance, and outlines potential pathways for commercialization, integrating material advancements with sustainability considerations to enhance practical applications in energy storage. Journal: *Wiley: Advanced Energy Materials: Table of Contents*

- **Competitive anion coordination overcomes charge-transfer barriers for lithium–sulfur batteries** — score: 0.800 The study reveals that enhancing anion coordination, specifically using FSI−, significantly improves the charge-transfer kinetics of lithium polysulfides in lithium-sulfur batteries. This competitive solvation approach leads to increased energy density and prolonged cycling performance in pouch cells, marking a significant advancement in lithium-sulfur battery technology. Journal: *Joule*
- **Aqueous eutectic electrolytes suppress oxygen and hydrogen evolution for long-life Zn||MnO2 dual-electrode-free batteries** — score: 0.700 The study discusses the development of eutectic aqueous-organic electrolytes that enhance the performance of zinc-manganese batteries by eliminating the need for acidic components. By optimizing the water-bonding network, the researchers successfully minimize gas generation during battery operation, resulting in prolonged cycling stability and improved efficiency of the battery system. Journal: *Nature Energy*
- **Breaking the boundaries of Li-S batteries with high-entropy engineered multifunctional materials** — score: 0.700 The article reviews advancements in lithium-sulfur (Li-S) batteries, highlighting how high-entropy materials (HEMs) can address key challenges such as polysulfide shuttling and slow redox kinetics. By utilizing the unique properties of HEMs, the research suggests potential breakthroughs in optimizing the performance and efficiency of Li-S batteries. Journal: *RSC - Energy Environ. Sci. latest articles*
- **Low-Cost Layered Cathodes Toward Practical Sodium-Ion Batteries: Scientific Challenges, Resolution Strategies, and Economic Efficiency** — score: 0.600 The article reviews the development of low-cost, nickel-free layered oxide cathodes for sodium-ion batteries (SIBs) as an eco-friendly alternative to traditional lithium-ion batteries. It explores the potential of using iron and manganese for charge compensation, identifies key scientific challenges such as ion migration and thermal instability, and emphasizes the economic advantages of these materials to promote commercialization in battery technology. Journal: *Wiley: Advanced Energy Materials: Table of Contents*
- **Taming polyiodide flow with electroactive mediators** — score: 0.600 The article discusses a novel redox-coupling strategy aimed at mitigating the negative effects of reactive polyiodide intermediates in zinc–iodine batteries. By confining the conversion reaction to the cathode, the researchers achieved shuttle-free operation, leading to improved battery reversibility and higher energy density. Journal: *Nature Chemistry*
- **Suppressing Dendrites in Lithium Metal Anodes: A Review of Passivation Layers and Multiscale Computational Approaches** — score: 0.600 This review article discusses strategies to suppress dendrite formation in lithium metal anodes, focusing on the role of passivation layers and various multiscale computational methods. The authors explore advancements in material designs and computational techniques that enhance the stability and performance of lithium batteries, aiming to address challenges in lithium metal anode applications. Journal: *ScienceDirect Publication: Energy Storage Materials*
- **Nitrogen-Directed Ti3C2Tx Enabling Rapid Proton Storage for Printed in-Plane Micro-Pseudocapacitors** — score: 0.600 The article presents a nitrogen-doped Ti3C2Tx MXene, named N300-Ti3C2Tx, as a novel electrode material for in-plane proton pseudocapacitors, enhancing proton storage through terminal nitrogen groups that lower diffusion barriers. This design achieves high specific capacitance and maintains 84.48% capacitance retention after 30,000 cycles, showcasing its potential for efficient microscale energy storage applications. Journal: *Wiley: Advanced Energy Materials:*

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- **Towards Safer Electrolytes: Comparing the Air Stability and Electrochemical Properties of NaPF6, NaTFSI and Na[B(hfip)4] • DME for Sodium-Ion Batteries** — score: 0.600 This study evaluates the air stability and electrochemical properties of various electrolyte salts—including NaPF6, NaTFSI, and Na[B(hfip)4] • DME—specifically for sodium-ion batteries (SIBs). The findings suggest that these electrolytes can enhance the safety and performance of SIBs, positioning them as a sustainable alternative to traditional lithium-ion battery technologies. Journal: *RSC - EES Batteries latest articles*
- **[ASAP] Fundamental Investigation of Lithium–Sulfur Battery Cathodes with Controlled Sulfur Content in Activated Carbon by Electrochemical Techniques** — score: 0.600 The article explores the electrochemical properties of lithium-sulfur battery cathodes by varying sulfur content in activated carbon. It utilizes controlled testing techniques to investigate the performance implications of sulfur ratios on battery efficiency and stability, contributing to the optimization of lithium-sulfur batteries. Journal: *Energy & Fuels: Latest Articles (ACS Publications)*
- **Mitigating Hydrogen Evolution Reaction with Polyzwitterionic Hydrogel Electrolyte in Aqueous Aluminum-ion Batteries** — score: 0.600 The article presents a novel polyzwitterionic hydrogel electrolyte (PZHE) designed for aqueous aluminum-ion batteries to address issues with hydrogen evolution reactions that hinder aluminum plating/stripping. By binding water and reducing its activity, the PZHE enables high ionic conductivity and stable electrochemical performance, achieving impressive results including 600 hours of reversible plating/stripping and enhanced capacity retention over extensive cycling, making it a promising solution for grid-scale energy storage. Journal: *Wiley: Advanced Energy Materials: Table of Contents*
- **Dual-pathway proton transport blockade enabling high areal loading aqueous zinc metal batteries** — score: 0.600 The article discusses the development of a zwitterionic hPDMP membrane that effectively blocks two types of proton transport—Grotthuss-type and vehicle-type—enhancing the stability of zinc metal cycling and enabling the efficient operation of high-loading zinc iodide pouch cells. This innovation is significant for improving the performance of aqueous zinc metal batteries. Journal: *RSC - Energy Environ. Sci. latest articles*
- **Aging of commercial sodium-ion batteries with layered oxides: how to measure and analyze it?** — score: 0.600 The article discusses the critical need for a deeper understanding of the aging processes in sodium-ion batteries, particularly focusing on the electrode-resolved aspects that have been underexplored. This understanding is essential for enhancing the performance and commercial viability of these batteries. Journal: *RSC - EES Batteries latest articles*
- **Enhanced Anode-Electrolyte Interfacial Interaction Boosting NaF-Rich SEI for STable Sodium-Metal Batteries** — score: 0.600 The article discusses a novel approach to improve the performance of sodium-metal batteries by enhancing the interaction at the anode-electrolyte interface. This improvement leads to a stable sodium fluoride-rich solid electrolyte interphase (SEI), which is crucial for the longevity and efficiency of the batteries. Journal: *ScienceDirect Publication: Energy Storage Materials*
- **Heterocycle-Bridged Short Sulfur-Chain Polymers for Polysulfide-Suppressing Cathodes in Lithium-Organosulfide Batteries** — score: 0.600 The article presents the development of a heterocycle-bridged short sulfur-chain polymer, poly(pyrazine tetrasulfide) (PPZTS), as a promising cathode material for lithium-organosulfide batteries. This polymer effectively mitigates polysulfide shuttling and enhances lithium ion diffusion, resulting in high capacity and improved cycling stability, making it suitable for practical energy storage applications. The PPZTS cathode achieves significant performance metrics, including a capacity of 850.9 mAh g−1 over 400 cycles, demonstrating its viability across diverse operating temperatures. Journal: *Wiley: Advanced Energy Materials: Table of Contents*
- **[ASAP] A Critical Evaluation of the Limiting Current Density in Polymer Electrolytes: Interplay of Ion Transport, Mechanical Stability, and Conformal Li–Electrolyte Interfaces** — score: 0.600 The article critically examines the role of ion transport and mechanical stability in de-

termining the limiting current density of polymer electrolytes, with a focus on how well-conformed interfaces between lithium and electrolytes affect performance. The study highlights the interplay of these factors, aiming to enhance understanding and optimization of polymer electrolytes for better battery applications. Journal: *Journal of the American Chemical Society: Latest Articles (ACS Publications)*

- **Molecularly aligned electron channels for ultrafast-charging practical lithium-metal batteries** — score: 0.600 The article discusses a novel design of solvent molecules aimed at enhancing lithium ion coordination in lithium-metal batteries. This advancement addresses the sluggish charge transfer that hampers ultrafast charging and reduces side reactions, ultimately enabling stable high-rate cycling for improved battery performance. Journal: *Nature Energy*
- **[ASAP] Electrolyte-Induced Interphase Programming for Aprotic High-Energy Lithium Metal Batteries** — score: 0.600 The article discusses a novel approach to enhance the performance of high-energy lithium metal batteries by utilizing electrolyte-induced interphase programming. This method aims to stabilize the lithium metal anode and improve battery efficiency by controlling the interphase formation, thus addressing critical challenges in battery technology. Journal: *ACS Energy Letters: Latest Articles (ACS Publications)*
- **Influence of Metal Species and Content of Fe-Ni-Poly(heptazine imides) on their Properties as Electrocatalysts for Zinc-Air Batteries** — score: 0.600 The study investigates iron/nickel-modified poly(heptazine imides) as cost-effective bifunctional electrocatalysts for oxygen reactions in zinc-air batteries. By incorporating Fe and Ni, the materials enhance catalytic activity, achieving performance comparable to expensive noble metals like RuO2, while maintaining excellent cycling stability over 250 cycles, suggesting their potential for sustainable energy applications. Journal: *Wiley: Advanced Energy Materials: Table of Contents*
- **"Acid-in-Alkali" structure for regulating dynamic evolution of manganese in Zn–Mn batteries** — score: 0.500 The article discusses a novel "Acid-in-Alkali" structural approach to enhance the performance and longevity of manganese in zinc-manganese batteries. This method aims to effectively manage the dynamic changes of manganese during battery operation, potentially leading to improved energy storage capabilities. Journal: *ScienceDirect Publication: Energy Storage Materials*
- **[ASAP] Molecular-Level Design of Localized High-Concentration Electrolytes for Sodium-Ion Batteries: A Combined DFT and MD Study** — score: 0.500 The article discusses a study that employs density functional theory (DFT) and molecular dynamics (MD) simulations to investigate the design of localized high-concentration electrolytes specifically for sodium-ion batteries. It aims to enhance the performance of these batteries by optimizing the electrolyte's molecular structure at a granular level. Journal: *ACS Applied Energy Materials: Latest Articles (ACS Publications)*
- **[ASAP] Enhancing Energy Conversion Efficiency and Suppression of Side Reactions in Li-O2 Batteries through a Magnetic Field Strategy** — score: 0.500 The study explores a novel approach to improve the energy conversion efficiency of lithium-oxygen (Li-O2) batteries by implementing a magnetic field strategy. This method not only enhances the overall performance of the batteries but also effectively suppresses undesirable side reactions that typically degrade battery function. Journal: *Journal of the American Chemical Society: Latest Articles (ACS Publications)*
- **[ASAP] Lattice-Distortion-Driven In Situ Formation of Coherent Structural Bands Lithium-Rich Oxides as Lithium-Ion Battery Cathodes** — score: 0.500 The article explores the in situ development of coherent structural bands in lithium-rich oxides, driven by lattice distortions, which enhance their performance as cathodes for lithium-ion batteries. This investigation provides insights into the structural evolution of these materials, potentially leading to improved battery efficiency and longevity. Journal: *ACS Energy Letters: Latest Articles (ACS Publications)*
- **[ASAP] Fe/Ni2P-Modified Porous Carbon Microtubes as Sulfur Host and Separator Modification Layer for Lithium–Sulfur Batteries** — score: 0.400 The article discusses the development of porous carbon microtubes modified with Fe/Ni2P to enhance their performance as a sulfur host and separator in lithium–sulfur batteries. This innovative approach aims to improve the electrochemical

properties and overall efficiency of the batteries, addressing challenges related to energy density and cycle stability. Journal: *ACS Applied Energy Materials: Latest Articles (ACS Publications)*

- **Anisotropic Strain-Induced Centrosymmetry Breaking in Cubic Formamidinium Lead Iodide (-FAPbI3) Thin Films** — score: 0.400 This study explores how anisotropic strain during the formation of preferentially oriented cubic -FAPbI3 thin films leads to centrosymmetry breaking and static Rashba band splitting. Employing various spectroscopic and diffraction techniques, the researchers provide evidence of this strain-induced lattice distortion and its effects on carrier dynamics, offering insights that could enhance the design of high-performance perovskite optoelectronic devices and quantum technologies. Journal: *Wiley: Advanced Energy Materials: Table of Contents*
- **Ultrafast Na Storage Enabled by In-Situ Formed Metal Nanoparticles in a Self-Assembled 3D Na2S Framework** — score: 0.400 The article discusses the development of a self-assembled three-dimensional Na2S framework that facilitates ultrafast sodium storage by generating metal nanoparticles in situ. This innovative approach enhances energy storage performance, providing insights into the optimization of sodium ion batteries. Journal: *ScienceDirect Publication: Energy Storage Materials*
- **Lattice-Coherent Epitaxial Surface Engineering in Highly Stable Co-Free Ultrahigh-Ni Cathodes** — score: 0.400 The article discusses advancements in enhancing the structural stability of cobalt-free ultrahigh nickel cathodes by employing lattice-coherent epitaxial surface engineering. This method aims to reduce surface-initiated degradation and extend the cycle lifespan of these materials, which are increasingly crucial for energy storage technologies. Journal: *RSC - Energy Environ. Sci. latest articles*
- **Integrated one-step dry process enabling prelithiated thick electrodes without primer coating for high energy density and initial Coulombic efficiency** — score: 0.400 The article presents an innovative one-step dry process for creating prelithiated thick electrodes without the need for primer coating, significantly enhancing energy density and initial Coulombic efficiency in battery technologies. By addressing ion mobility issues in traditional thick electrodes, particularly for anodes, this method shows promise for improving battery performance. Journal: *RSC - Energy Environ. Sci. latest articles*
- **[ASAP] Bridging Anode and Cathode Interfaces: Integrated Interfacial Strategies for Aqueous Metal–Air Batteries** — score: 0.400 The article discusses innovative strategies to enhance the performance of aqueous metal-air batteries by optimizing the interfaces between the anode and cathode. It highlights the importance of integrated interfacial design in improving battery efficiency and overall energy output. Journal: *ACS Energy Letters: Latest Articles (ACS Publications)*