# Article information:

Issues and rational design of aqueous electrolyte for Zn‐ion batteries - Zhang - 2021 - SusMat - Wiley Online Library  
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# Article summary:

1. Aqueous Zn-ion batteries (AZIBs) have broad application prospects in large-scale energy storage systems due to their non-toxicity, high abundance, and high theoretical capacity.

2. The electrolyte is an important component connecting the cathode and anode by ion transmission, and its modification approaches include increasing salt concentration and introducing functional additives to improve the electrochemical performance of AZIBs.

3. Practical issues such as electrolyte decomposition, cathode dissolution, anode corrosion, hydrogen evolution, byproduct generation, and dendrite growth need to be solved for the practical applications of AZIBs using aqueous Zn salt solution as the electrolyte. Rational design of aqueous electrolytes for Zn-ion batteries requires a better understanding of the interactions between electrolytes and electrodes.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

该文章是一篇关于水系锌离子电池电解液的问题和合理设计的综述。文章首先介绍了大规模储能系统的需求和传统锂离子电池在此方面的不足，然后介绍了水系锌离子电池作为一种潜在的替代方案，并讨论了其主要组成部分（阴极、阳极和电解液）的研究进展。接着，文章指出了水系锌离子电池中存在的一些关键问题，并介绍了目前用于改善电解液性能的两种主要方法：增加盐浓度和引入功能添加剂。最后，文章总结了仍然存在的挑战，并提出了几条建议以实现合理设计。

整体而言，该文章对水系锌离子电池电解液进行了比较全面和深入的探讨，但也存在一些潜在偏见和局限性。具体来说：

1. 片面报道：文章没有提到其他类型的锌离子电池（如有机溶剂型或固态型），因此可能会给读者留下这是唯一可行选择的印象。

2. 缺失考虑点：尽管文章提到了水系锌离子电池中存在的一些问题，但它并没有探讨这些问题是否可以通过其他方法来解决（例如使用不同类型或形状的阴极/阳极材料）。

3. 偏袒：文章似乎更倾向于使用功能添加剂而不是增加盐浓度来改善电解液性能。虽然这两种方法都有优缺点，但作者并没有充分探讨它们之间的差异或权衡。

4. 未探索反驳：尽管作者提到了某些争议性观点（例如关于氧化还原反应机制），但他们并没有详细地探讨这些观点是否正确或是否存在其他可能性。

5. 宣传内容：尽管作者试图提供一个全面而客观的评估，但他们也强调了水系锌离子电池作为大规模储能系统中最好选择之一。这可能会导致读者忽略其他潜在选项或风险。

6. 没有平等地呈现双方：尽管作者试图提供一个全面而客观的评估，但他们也强调了水系锌离子电池作为大规模储能系统中最好选择之一。这可能会导致读者忽略其他潜在选项或风险。

总之，该文章对水系锌离子电池电解液进行了比较全面和深入的探讨，并提供了有价值且实用性很高的信息。然而，在某些方面存在潜在偏见和局限性，需要更多独立研究来验证其结论并确定最佳实践。

# Topics for further research:

* Other types of zinc-ion batteries
* Alternative solutions to the issues in aqueous zinc-ion batteries
* Comparison between using functional additives and increasing salt concentration
* Exploration of controversial viewpoints and alternative possibilities
* Potential drawbacks and risks of aqueous zinc-ion batteries
* Balanced presentation of different options for large-scale energy storage systems

# Report location:

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