# Article information:

Redox Mediator Chemistry Regulated Aqueous Batteries: Insights into Mechanisms and Prospects | CCS Chem
<https://www.chinesechemsoc.org/doi/10.31635/ccschem.022.202202125>

# Article summary:

1. The development of affordable energy harvesting and storage technology is a grand challenge in lowering humanity’s dependence on fossil fuels.

2. Rechargeable battery technologies, such as aqueous batteries, have become a focus due to their low-cost, nontoxic, and high-safety merits.

3. The redox mediator (RM) strategy is promising in regulating reversibility and kinetics of the redox couples, serving as intermediate electron carriers or reservoirs to react chemically and spontaneously with the active materials (AMs).

# 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:

The article provides an overview of the integrated strategies of RMs in regulating the redox couples in different aqueous batteries. It presents an unbiased view of the potential benefits of using RMs in aqueous batteries, such as improved cycling performance, more active material utilization, higher coulombic efficiency, faster electrochemical kinetics, and lower overpotential. The article also mentions some drawbacks associated with using RMs in aqueous batteries that need to be addressed before they can be widely adopted.

The article is generally reliable and trustworthy as it provides evidence for its claims by citing relevant research papers throughout the text. However, there are some points that could be further explored or discussed more thoroughly. For example, while the article mentions some potential risks associated with using RMs in aqueous batteries (such as toxicity), it does not provide any detailed information about these risks or how they can be mitigated. Additionally, while the article discusses some potential benefits of using RMs in aqueous batteries, it does not discuss any possible drawbacks or limitations associated with this approach. Furthermore, while the article cites several research papers to support its claims throughout the text, it does not provide any counterarguments or alternative perspectives on these claims from other sources.

In conclusion, overall this article is reliable and trustworthy but could benefit from further exploration into potential risks associated with using RMs in aqueous batteries as well as providing alternative perspectives on its claims from other sources.

# Topics for further research:

* Risks associated with using redox mediators in aqueous batteries
* Limitations of using redox mediators in aqueous batteries
* Alternative perspectives on using redox mediators in aqueous batteries
* Mitigation strategies for toxicity of redox mediators in aqueous batteries
* Advantages and disadvantages of using redox mediators in aqueous batteries
* Recent research on using redox mediators in aqueous batteries

# Report location:

<https://www.fullpicture.app/item/a844b7bc22c32dbcda29d32e49aade6d>