# Article information:

A durable ZnS cathode for aqueous Zn-S batteries - ScienceDirect
<https://www.sciencedirect.com/science/article/pii/S2211285522005523>

# Article summary:

1. ZnS is used as the cathode in aqueous Zn-S batteries to avoid volume expansion.

2. Nanosized ZnS and micron-grade carbon sheath are used to increase reaction area and accelerate ion and electron transport.

3. Redox mediator (I−) is used to reduce charge overpotential and voltage hysteresis.

# 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 “A durable ZnS cathode for aqueous Zn-S batteries” provides an overview of the potential use of nanoscale ZnS packed and connected by carbon sheath (ZnS@CF) as the cathode for aqueous zinc-ion batteries, with iodinated thiourea as a redox mediator. The article is generally well written, providing clear explanations of the concepts discussed, supported by relevant research studies from other sources. The article does not appear to be biased or promotional in nature, presenting both sides of the argument equally. However, there are some points that could be further explored in order to provide a more comprehensive understanding of the topic at hand. For example, while the article mentions that redox mediators can improve reaction kinetics, it does not discuss any potential risks associated with their use or how they may affect battery performance over time. Additionally, while the article discusses how nanosized ZnS particles can increase reaction area and accelerate ion and electron transport, it does not provide any evidence or data to support this claim. Furthermore, while the article mentions that zinc-sulfur (Zn-S) batteries have a high energy density due to their high theoretical capacity of S (1675 mAh g−1), it does not explore any possible counterarguments or alternative solutions that could be used to achieve similar results without using sulfur as a cathode material. In conclusion, while this article provides an interesting overview of potential uses for nanoscale ZnS packed and connected by carbon sheath (ZnS@CF) as the cathode for aqueous zinc-ion batteries, there are still some areas that could be further explored in order to provide a more comprehensive understanding of this topic.

# Topics for further research:

* Redox mediator risks
* Zinc-sulfur battery energy density
* Nanoparticle reaction area
* Ion and electron transport acceleration
* Alternative cathode materials for Zn-S batteries
* Zinc-ion battery performance over time

# Report location:

<https://www.fullpicture.app/item/6a54fa6544bb5cf4bb49ce6216d2c25a>