# Article information:

Stable Cocatalyst‐Free BiVO4 Photoanodes with Passivated Surface States for Photocorrosion Inhibition - Gao - 2020 - Angewandte Chemie International Edition - Wiley Online Library
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# Article summary:

1. Bismuth vanadate (BiVO4) is a promising candidate for photoelectrochemical (PEC) water splitting due to its suitable band gap and conduction band position.

2. However, it suffers from substantial surface and bulk recombination losses that limit its PEC performance, as well as photocorrosion which limits its long-term stability.

3. This article proposes a method to synthesize BiVO4 photoelectrodes with increased oxygen vacancies and passivated surface states to boost charge transport and reduce carrier recombination, leading to an extended photostability of over 25 hours without any cocatalyst decoration.

# 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 is generally reliable in terms of the evidence presented for the claims made, as well as the research methods used. The authors provide detailed descriptions of their synthesis process, as well as the results of their experiments in terms of photocurrents and onset potentials achieved. They also cite relevant literature throughout the article to support their claims.

However, there are some potential biases in the article that should be noted. For example, the authors focus mainly on the advantages of their proposed method for synthesizing BiVO4 photoelectrodes without mentioning any potential drawbacks or risks associated with it. Additionally, they do not explore any counterarguments or alternative approaches that could be taken when synthesizing these photoelectrodes. Furthermore, they do not present both sides equally when discussing other approaches such as cocatalyst deposition or defect engineering; instead they focus mainly on how these approaches can be improved upon by their own method.

In conclusion, while this article is generally reliable in terms of evidence presented and research methods used, there are some potential biases that should be noted when assessing its trustworthiness and reliability.

# Topics for further research:

* BiVO4 photoelectrode synthesis drawbacks
* Alternative approaches to BiVO4 photoelectrode synthesis
* Cocatalyst deposition for BiVO4 photoelectrodes
* Defect engineering for BiVO4 photoelectrodes
* Advantages of BiVO4 photoelectrode synthesis
* Disadvantages of BiVO4 photoelectrode synthesis

# Report location:

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