# Article information:

Performance of intrinsic heteroatoms in cobalt phosphide loaded ginkgo leave-based carbon material on promoting the electrocatalytic activity during hydrogen evolution reaction and oxygen evolution reaction - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S0016236122031921>

# Article summary:

1. Ginkgo leave-based carbon material was used to prepare cobalt phosphide (CoP) via a carbothermal reduction method.

2. The N/S/P co-doping of the carbon matrix improved the electrocatalytic properties of CoP@NSPC, accelerating electron transfer and adjusting the d-band center.

3. The CoP@NSPC showed excellent activity towards hydrogen evolution reaction (HER) and oxygen evolution reaction (OER), with high efficiency and long durability in overall water splitting.

# 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 and trustworthy, as it provides detailed information on the preparation of cobalt phosphide (CoP) loaded on nitrogen/sulfur/phosphorus co-doped carbon matrix (CoP@NSPC) using ginkgo leave-based carbon as the precursor, and its effects on electrocatalytic properties. The article also discusses the D-band structure of CoP varied with N/S/P co-doping on carbon support, which is further verified in overall water splitting experiments.

However, there are some potential biases that should be noted in this article. Firstly, the article does not provide any evidence for its claims regarding the effects of intrinsic heteroatoms from ginkgo leaves on accelerating electron transfer and adjusting the d-band center of CoP@NSPC. Secondly, there is no discussion about possible risks associated with using ginkgo leaves as a precursor for preparing CoP@NSPC, such as toxicity or environmental impact. Thirdly, while the article presents both sides equally when discussing HER and OER activities of CoP@NSPC compared to other catalysts, it does not present both sides equally when discussing its advantages over noble metal catalysts due to its affordability and stability. Finally, there is no mention of unexplored counterarguments or missing points of consideration regarding the use of ginkgo leaves as a precursor for preparing CoP@NSPC.

In conclusion, while this article provides detailed information on the preparation of CoP@NSPC using ginkgo leave-based carbon as a precursor and its effects on electrocatalytic properties, there are some potential biases that should be noted when assessing its trustworthiness and reliability.

# Topics for further research:

* Ginkgo leaves toxicity
* Environmental impact of ginkgo leaves
* Counterarguments for using ginkgo leaves as a precursor
* Missing points of consideration for CoP@NSPC
* Intrinsic heteroatoms and electron transfer
* Comparison of CoP@NSPC to noble metal catalysts

# Report location:

<https://www.fullpicture.app/item/5e692f6a62881ec56ca9544a01a7e239>