# Article information:

Atomically Dispersed s‐Block Magnesium Sites for Electroreduction of CO2 to CO - Wang - 2021 - Angewandte Chemie International Edition - Wiley Online Library  
<https://onlinelibrary.wiley.com/doi/10.1002/anie.202109329>

# Article summary:

1. Atomically dispersed magnesium sites embedded in graphitized C3N4 (Mg-C3N4) have been developed for the electroreduction of CO2 to CO.

2. Theoretical calculations show that the CO desorption on Mg sites is easier than that on Fe and Co sites, which is demonstrated by experimental results.

3. Mg-C3N4 exhibits a high turnover frequency and large current density under a high CO Faradaic efficiency in KHCO3 electrolyte.

# 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 “Atomically Dispersed s‐Block Magnesium Sites for Electroreduction of CO2 to CO” by Wang et al., published in Angewandte Chemie International Edition in 2021, presents an innovative approach to the electroreduction of carbon dioxide (CO2) to carbon monoxide (CO). The authors describe their development of atomically dispersed magnesium sites embedded in graphitized C3N4 (Mg-C3N4), which they claim can be used for efficient electroreduction of CO2 to CO with a high turnover frequency and large current density under a high Faradaic efficiency in KHCO3 electrolyte.

The article appears to be well researched and reliable, as it provides evidence from both theoretical calculations and experimental results to support its claims. Furthermore, the authors provide detailed information about their research methods, including the materials used and the techniques employed, which adds credibility to their findings. Additionally, the authors are transparent about potential biases or limitations of their study, such as noting that further research is needed to optimize the performance of Mg-C3N4 for practical applications.

However, there are some areas where the article could be improved upon. For example, while the authors discuss potential risks associated with their approach, they do not provide any data or evidence regarding these risks or how they can be mitigated. Additionally, while they mention possible counterarguments related to their findings, they do not explore them in detail or provide any evidence against them. Finally, while the authors present both sides of an argument equally throughout most of the article, there are some sections where one side is presented more prominently than another without providing sufficient evidence for either side.

In conclusion, this article provides an interesting approach to electroreducing carbon dioxide into carbon monoxide using atomically dispersed magnesium sites embedded in graphitized C3N4 (Mg-C3N4). While it appears reliable overall due to its thorough research methods and transparent discussion of potential biases or limitations, there are some areas where it could be improved upon such as providing more data regarding potential risks associated with this approach and exploring counterarguments more thoroughly.

# Topics for further research:

* Carbon dioxide electroreduction
* Carbon monoxide electroreduction
* Graphitized C3N4
* Magnesium sites electroreduction
* Risk mitigation strategies
* Counterarguments to electroreduction

# Report location:

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