# Article information:

Sulfamethoxazole degradation by visible light assisted peroxymonosulfate process based on nanohybrid manganese dioxide incorporating ferric oxide - ScienceDirect  
<https://www.sciencedirect.com/science/article/abs/pii/S0926337320307128>

# Article summary:

1. The continuous discharge of antibiotics into the environment is a worldwide environmental issue due to large-scale antibiotic use and inefficient removal in conventional wastewater treatment plants.

2. Advanced oxidation processes (AOPs) can achieve high degradation rates and mineralization efficiency of organic pollutants in wastewater, but have limitations such as difficulties in transportation and storage of H2O2, narrow pH working range, metal leaching, and sludge production.

3. A nanohybrid manganese dioxide incorporating ferric oxide was developed as an efficient PMS activator for visible light assisted peroxymonosulfate process with excellent catalytic performance and potential to overcome the shortcomings of cobalt-based catalysts.

# 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 “Sulfamethoxazole degradation by visible light assisted peroxymonosulfate process based on nanohybrid manganese dioxide incorporating ferric oxide” is a scientific paper that discusses the development of a nanohybrid manganese dioxide incorporating ferric oxide as an efficient PMS activator for visible light assisted peroxymonosulfate process with excellent catalytic performance and potential to overcome the shortcomings of cobalt-based catalysts. The article is well written and provides detailed information about the research conducted, including materials used, characterization analysis, results obtained from experiments, discussion of findings, conclusion drawn from the study, etc.

The article appears to be reliable and trustworthy as it provides evidence for its claims through experiments conducted by the authors. The authors also provide references to other studies related to their research topic which adds credibility to their work. Furthermore, the authors declare any competing interests they may have at the end of the article which further adds to its trustworthiness.

However, there are some points that could be improved upon in order to make this article more reliable and trustworthy. For example, while the authors discuss possible risks associated with cobalt-based materials used in advanced oxidation processes (AOPs), they do not mention any potential risks associated with using manganese-based materials or nanohybrids incorporating ferric oxide which could be explored further in future studies. Additionally, while the authors provide references for other studies related to their research topic, they do not explore any counterarguments or present both sides equally which could add more depth to their discussion section.

In conclusion, this article is generally reliable and trustworthy as it provides evidence for its claims through experiments

# Topics for further research:

* Advanced oxidation processes (AOPs) risks
* Manganese-based materials risks
* Nanohybrid incorporating ferric oxide risks
* Counterarguments for visible light assisted peroxymonosulfate process
* Advantages of nanohybrid manganese dioxide incorporating ferric oxide
* Comparison of cobalt-based catalysts and nanohybrid manganese dioxide incorporating ferric oxide

# Report location:

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