# Article information:

Photocatalysis-activated SR-AOP over PDINH/MIL-88A(Fe) composites for boosted chloroquine phosphate degradation: Performance, mechanism, pathway and DFT calculations - ScienceDirect
<https://www.sciencedirect.com/science/article/abs/pii/S0926337321003556?via%3Dihub=>

# Article summary:

1. Chloroquine phosphate (CQ) is a pharmaceutical drug used to treat malaria, amebiasis, rheumatoid arthritis, and COVID-19. However, it is persistent and bio-accumulative, posing a potential threat to living organisms and the environment.

2. Photocatalysis-activated sulfate radical-advanced oxidation process (SR-AOP) with the aid of metal-organic frameworks (MOFs) has attracted attention for environmental remediation. Fe-containing MOFs, such as MIL-88A(Fe), have been shown to be effective catalysts for activating peroxymonosulfate (PMS) and peroxydisulfate (PDS).

3. The article presents a study on the use of PDINH/MIL-88A composites as photocatalysis-activated SR-AOP catalysts to degrade chloroquine phosphate under visible light irradiation. The composites exhibited superior activity compared to individual MIL-88A and PDINH, with a degradation rate 4.29 times higher than that of PDINH alone.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

作为一篇科学论文，该文章提供了详细的实验过程和结果，但也存在一些潜在的偏见和缺陷。

首先，文章没有充分探讨CQ对环境和生物的潜在风险。虽然提到了CQ作为抗病毒和抗菌药物可能对生物和环境造成潜在威胁，但并未深入探讨其具体影响。此外，文章也没有考虑到可能存在的副产物或降解产物对环境和生物的影响。

其次，文章只关注了PDINH/MIL-88A复合材料在PDS活化下的性能表现，并未与其他材料进行比较或探讨其优劣之处。这可能导致读者对该复合材料的性能有过高期望或不准确的认识。

此外，在文章中提到了DFT计算用于预测电子转移途径等理论方面，但并未提供足够详细的信息以便读者理解计算方法及其可靠性。

最后，在文章中出现了一些宣传内容，如将PDINH/MIL-88A复合材料描述为“成功制备”、“优越”的表现，并未充分探讨其局限性或其他可能存在的问题。这可能导致读者对该材料的性能有过高期望或不准确的认识。

综上所述，该文章提供了一些有价值的实验结果和理论探讨，但也存在一些潜在的偏见和缺陷。为了更全面地评估该复合材料的性能和潜在影响，需要进一步研究其与其他材料的比较、副产物和降解产物对环境和生物的影响等方面。

# Topics for further research:

* Potential environmental and biological risks of CQ
* Degradation products of CQ and their impact
* Comparison of PDINH/MIL-88A with other materials
* Reliability of DFT calculations for predicting electron transfer pathways
* Limitations and potential issues of PDINH/MIL-88A
* Impact of degradation products on the environment and biology

# Report location:

<https://www.fullpicture.app/item/d4fb7cb5c08a16d04a10a94533fa32f0>