# Article information:

Frontiers | Recent Progress in Adipic Acid Synthesis Over Heterogeneous Catalysts  
<https://www.frontiersin.org/articles/10.3389/fchem.2020.00185/full>

# Article summary:

1. Adipic acid (AA) has practical use in industrial production, but current manufacturing processes emit greenhouse gases and use toxic reagents.

2. Sustainable protocols for AA synthesis involve the use of clean oxidants and separable, reusable catalysts such as metal oxides, hollow structure silicates, carbon nanotubes, and polyoxometalates.

3. Alternative bio-derived AA processes involve oxidizing lignocellulosic biomass derived chemicals like hemicellulose, cellulose, and lignin to form glucaric acid or other intermediates that can be further hydrogenolyzed to form AA.

# 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:

该文章主要介绍了异质催化剂在合成己二酸中的应用和可持续发展的方法。然而，该文章存在一些偏见和不足之处。

首先，该文章没有充分探讨异质催化剂的缺点和潜在风险。虽然使用固体催化剂可以减少废弃物和污染物的产生，但这些催化剂可能会对环境造成其他影响。例如，一些金属氧化物可能会释放有毒气体或重金属离子，并对环境和人类健康造成危害。

其次，该文章没有平等地呈现双方观点。虽然作者提到了传统合成己二酸方法的缺点，但他们没有探讨这种方法的优点或为什么它仍然被广泛使用。此外，他们也没有探讨生物来源合成己二酸方法的局限性或挑战。

此外，该文章存在一些片面报道和未经证实的主张。例如，在介绍生物来源合成己二酸时，作者声称“不形成任何温室气体”，但并未提供支持这种说法的证据或数据。

最后，该文章存在一些宣传内容和偏袒。例如，作者强调使用可持续方法合成己二酸的必要性，但没有探讨这些方法的经济可行性或实际应用情况。此外，他们也没有探讨传统方法和生物来源方法之间的平衡或可能的妥协。

因此，该文章需要更全面、客观和平衡地呈现双方观点，并提供更多证据来支持其主张。同时，作者还需要考虑异质催化剂的潜在风险和生物来源合成己二酸方法的局限性。

# Topics for further research:

* Limitations and potential risks of heterogeneous catalysts
* Balanced presentation of traditional and alternative methods for adipic acid synthesis
* Challenges and limitations of biologically sourced adipic acid
* Lack of evidence to support claims made in the article
* Consideration of economic feasibility and practical application of sustainable methods
* Finding a balance between traditional and alternative methods for adipic acid synthesis

# Report location:

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