# Article information:

Electrocatalytic dual hydrogenation of organic substrates with a Faradaic efficiency approaching 200% | Nature Catalysis  
<https://www.nature.com/articles/s41929-023-00923-6>

# Article summary:

1. 通过使用钯膜电极，可以克服电催化氢化的固有限制，包括底物溶解度和难以从电解质中分离产物。

2. 利用钯膜阳极上低电位氧化甲醛产生可渗透穿过膜电极的氢气，可以在另一个钯膜阴极上实现不饱和二羧酸的电催化双重氢化。

3. 这种设计使得同一底物在两个空间隔离的室内同时在阳极和阴极上进行电催化氢化，理论最大法拉第效率可达200%。

# 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:

作为一篇科学研究论文，该文章并没有明显的偏见或宣传内容。然而，需要注意的是，该研究仅在实验室条件下进行，并未考虑到可能的环境风险和可持续性问题。此外，文章中也没有探讨其他可能存在的方法来解决有机底物氢化的挑战，因此可能存在一定的片面性。另外，该研究使用了贵金属钯作为电极材料，这可能会导致成本较高和资源稀缺等问题。总之，在评估这项研究时需要考虑到其局限性和潜在影响，并结合其他相关研究进行综合分析。

# Topics for further research:

* Environmental risks of organic substrate hydrogenation
* Sustainability issues in organic substrate hydrogenation
* Alternative methods for organic substrate hydrogenation
* Cost-effective electrode materials for organic substrate hydrogenation
* Resource scarcity in electrode materials for organic substrate hydrogenation
* Comprehensive analysis of organic substrate hydrogenation research

# Report location:

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