

Title: Problems with artificial photosynthesis

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In this review, recent developments in computational methods for studying complex interfaces for artificial photosynthesis will be provided and selected cases discussed, to assess the inherent ability ...

In this chapter, we summarize the general principles of artificial photosynthesis as well as the basic requirements for any photon-driven reaction to occur.

Before we indulge in sweet dreams of filling up our cars with CO₂-neutral fuel made from sunlight, water, and air, let's take a step back and look at what artificial photosynthesis actually is -- and how far the ...

By imitating the natural photosynthesis system, researchers have been exploiting artificial photosynthesis (APS) via coupling photocatalysis and biocatalysis systems to realize green ...

Challenges and future potentials in artificial photosynthesis are addressed. As the global energy crisis deepens and the demand for carbon emission reductions grows more urgent, the rapid ...

Concomitantly, we present and discuss several reports on artificial photosynthesis that demonstrated some interesting designs of various light-harvesting materials and photocatalytic ...

Artificial photosynthesis is already being undertaken. It can produce valuable compounds, such as fragrances, using only sunlight, water and CO₂, but the costs make it impossible to do this ...

In conclusion, the book provides readers with some of the most recent and exciting breakthroughs from natural to artificial photosynthesis, discusses the potential limitations of the ...

These achievements make it clear that artificial photosynthesis is possible, but there are challenges to overcome: Splitting water into H₂ and O₂ involves integrated systems for light ...

Creating a functional artificial photosynthesis system requires a sophisticated toolkit of materials and



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components. Researchers across various institutions are experimenting with different combinations ...

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