

Photosynthesis is the process by which green plants and certain other organisms transform light energy into chemical energy. During photosynthesis in green plants, ...

Abstract The current pandemic has adversely affected oxygen production and supply chain, where oxygen treatment is essential for the emergency treatment protocol of ...

Oxygen storage may be advisable to ensure steady gasifier operation through periods of high oxygen demand. Nitrogen may be released at low pressure to atmosphere, or compressed to ...

A fundamental re-assessment of the overall energetics of biochemical electron transfer chains and cycles is presented, highlighting the crucial role of the highest-energy ...

In this context, the design of cost-effective and highly active electrocatalysts for energy storage applications is a crucial component for the future dream of carbon-neutral ...

Instead, the diffusion of subsurface oxygen to the surface oxygen vacancies only exhibits a low energy barrier of 0.24 eV, which indicates that the surface reactions (O_2 ...

A novel solar chemical looping air separation (Sol-CLAS) system is proposed here, in which oxygen carrier particles, composed of CuO as the active ingredient and MgAl₂ ...

Oxygen production as a by-product from renewable energy-based water electrolysis has great potential to support the clean energy transition. This study reviews the ...

Oxygen carrier (OC) material acting as the intermediate between reactors is key in a chemical looping process. Cu-based OCs are attractive candidates due to the superiority ...

Cells generate energy from the controlled breakdown of food molecules. Learn more about the energy-generating processes of glycolysis, the citric acid cycle, and oxidative phosphorylation.

In this work, we proposed a mathematical programming model to investigate effects of stable flowrates of energy carriers on the design and operation of a cooperated ...

While in the oxidization stage, the oxygen depleted OCMs were regenerated by steams, finally leading to H₂ production [15,16]. In general, the chemical energy of fuels spits ...

This work sheds light on the potential of chemical energy storage applications, and aims to open new avenues for holistic assessments of power generation and storage ...

This study aims to fill those gaps with a comprehensive review on the modern oxygen economy and the available literature on the usage of electrolytic oxygen. It presents an ...

Thermal energy storage based on gas-solid reversible chemical reactions offers higher-energy storage densities than commercially implemented sensible heat-storage ...

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