

# Research report on solar container of anthraquinone compounds

<div class="df\_qntext">What is anthraquinones photocatalytic technology?

The perspectives of anthraquinones photocatalytic technology are presented. In recent years, there has been significant interest in photocatalytic technologies utilizing semiconductors and photosensitizers responsive to solar light, owing to their potential for energy and environmental applications.

<div class="df\_qntext">Can anthraquinone-2-sulfonate drive solar-to-n 2O production?

Anthraquinone-2-Sulfonate as a Microbial Photosensitizer and Capacitor Drives Solar-to-N 2O Production with a Quantum Efficiency of Almost Unity Semiartificial photosynthesis shows great potential in solar energy conversion and environmental application.

<div class="df\_qntext">What are anthraquinone compounds?

Anthraquinone compounds (AQs) are a class of planar tricyclic aromatic hydrocarbon compounds derived from anthracene, including emodin, aloe-emodin (AE), chrysophane, and physcion, which are widely used in cosmetics, industrial dyes, and other fields.

<div class="df\_qntext">Does anthraquinone-2 sulphonate have a higher formation energy than disubstituted AQ?

For instance, DFT studies by Liu et al. revealed that anthraquinone-2-sulphonate (AQ2S) exhibited a higher formation energy for triplet excited states compared to disubstituted AQ, enhancing its capacity to abstract hydrogen and react with O<sub>2</sub> to yield ROS.

<div class="df\_qntext">Can anthraquinone be used in food preservation?

Application of anthraquinone in food preservation As depicted in Fig. 4, AQs possess excellent antibacterial properties (against organisms such as staphylococcus, flavobacterium columnar, and helicobacter pylori), superoxide dismutase (SOD) activity, and free radical scavenging ability.

<div class="df\_qntext">How to extract anthraquinone from natural plants?

Solvent extraction is the traditional method for extracting anthraquinone with characteristics of simplicity, lack of special equipment, and low cost. However, its limited extraction efficiency makes it difficult to obtain AQs from natural plants.

Here we report an efficient SRFC based on a dual-silicon photoelectrochemical cell and a quinone/bromine redox flow battery for in situ solar energy conversion and storage.

Emodin, a natural anthraquinone derivative isolated from *Rheum palmatum* L., has been demonstrated to exhibit good anti-cancer effect. In this study, a series of novel quaternary ammonium ...

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This review summarizes the current state of research on extraction and purification techniques for anthraquinones from a variety of natural plant species, along with an evaluation of their ...

In this review, we thoroughly describe the photochemical properties of AQs and their potential applications in photocatalysis, particularly in addressing key environmental challenges like clean ...

Anthraquinones are bioactive natural products, which are often found in medicinal herbs. These compounds exert antioxidant-related pharmacological actions including neuroprotective ...

In general, anthraquinone compounds have been considered to have anticancer activity mainly through DNA damage, cycle arrest and apoptosis. However, recent studies have shown that novel ...

Request PDF | Anthraquinone: a promising scaffold for the discovery and development of therapeutic agents in cancer therapy | Cancer, characterized by uncontrolled malignant neoplasm, ...

Herein, we demonstrate that the photocatalytic performance of TiO<sub>2</sub> for H<sub>2</sub>O<sub>2</sub> production under solar light irradiation can be substantially improved by complexing anthraquinone ...

In this research, we have developed an integrated anthraquinone-based SRFB device that consists of 2,6-DBEAQ and K<sub>4</sub>[Fe(CN)<sub>6</sub>] redox couples paired with a single triple-junction ...

Despite their widespread use, there are few examples in the literature of metal-free anthraquinone-based structures in dye-sensitised solar cells (DSSCs). To date, only five cases of ...

Enhancement of Photo-bromination of Phenol by Anthraquinone-2-sulphonate and Benzophenone: Implication for Photo-production of Organic Brominated Compounds by Dissolved Organic Matter in ...

Quinone compounds could significantly accelerate anaerobic biotransformation of refractory pollutants. However, the effect of quinone compounds application on the propagation of ...

Most of these compounds are derivatives of the basic structure 9,10-anthracenedione, a tricyclic aromatic organic compound with the formula C<sub>14</sub>H<sub>8</sub>O<sub>2</sub>. [13-14]. In Thailand, there have been studies ...

The Ag@TiO<sub>2</sub> core-shell-structured nanocatalyst was evaluated for its photocatalytic activity towards the degradation of Acid Blue-129 (AB-129), an Anthraquinone dye under solar light...

2-Anthraquinone sulfonate (2-AQS) was found to exhibit an abnormally high singlet-oxygen quantum yield in aqueous solution after UVA irradiation based on a widely used testing method for singlet ...

Author Response File: Author Response.pdf Reviewer 3 Report The work is devoted to a systematic study of

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the ability of time-dependent density-functional theory (TD-DFT), with a variety ...

In this research, utilizing cost-effective starting materials including aniline and anthraquinone, the small organic molecule 37 was synthesized as an efficient semiconductor species.

A series of unique four mono-azo substituted anthraquinone analogue were synthesized by using the anthraquinone components in the diazo-coupling technique. The FT-IR, <sup>1</sup>H NMR, and ...

Anthraquinones are bioactive natural products, some of which are active components in medicinal medicines, especially Chinese medicines. These compounds exert actions including purgation, anti ...

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