

Solar energy environmental protection boat design Chinese simplicity

What are the areas for advancing solar energy-powered boats?

A comprehensive review of the existing literature, including journal articles, proceedings, and patents, is conducted to identify three prominent areas for advancing solar energy-powered boats: maritime drones, sporting boats, and short-range touristic vessels.

What is solar-powered boat?

Solar-powered boat is the promising technology in marine transportation. Two types of solar boats are there. One is a PV integrated solar boat with an existing diesel-powered engine and the other one boat completely uses solar energy to run all the electrical loads [3,4,57].

Can solar power make a boat based on solar power?

The purpose of this research is to design and fabricate a boat based on solar power. The boat will be conducted by the energy processed from solar by minimizing environmental pollution and fuel cost.

What is an energy-independent recreational boat?

This project describes the design of an energy-independent recreational boat with an electric engine powered by energy from the sun. It contains the design and simulation of a boat with an integrated solar energy system to create a vessel that is able to transport 36 persons, and is emission and pollution free.

How to develop innovative solar-driven boat?

Conclusion There are two methods to develop innovative solar-driven boat. The first one is a PV-diesel hybrid system for huge water boat and the other one is all alone PV-based for small boat. The results from works shows that hybrid system boat can reduce the consumption of fuel and can decrease the emission of harmful gases.

Does solar power system improve stability and security of ship power system?

It has been concluded that the entire power system with PV system improves the stability and security of the ship power system. Liu et al. studied a model to diminish CO₂ and NO_x gas discharge and upgraded energy efficiency by conveying sunpowered PV and capacity frameworks on a boat.

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In the past decades, China has emerged as the world's largest emitter of greenhouse gases, with its energy sector accounting for approximately 70% of the country's carbon emissions (Fang et al., 2022). Just one year, in 2022, China's carbon dioxide emissions reached a staggering 10.55 billion metric tons, accounting for 30.69% of the global total.

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Solar powered boat or all electric boat brings the opportunity to decrease greenhouse emissions and shift towards utilization of renewable and sustainable energy. In this paper the research ...

The purpose of this article is to examine the impact of voluntary environmental regulation on China's solar energy industry trade flows. To this aim, the paper selects panel data of Chinese solar ...

This paper presents a methodology to design a solar power boat with the aim to determine the size of photovoltaic (PV) system with minimum cost. Two stages optimization ...

environmental protection. Table 1 presents an overall framework regarding the alternative energy using boats and their design specifications. As can be seen, boats in various sizes and ...

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China holds the current title for the world's largest FPV installation, a 150-MW plant in Anhui. Notably, the main ambitious goal of China country is to achieve peak carbon emissions by 2030 and carbon neutrality by 2060 [19], making FPVs a key player in renewable energy strategies. Inspired by this potential, countries like Iran [20] have been actively designing and constructing ...

Fossil fuels are the primary energy sources of China, which are not only expensive but have adverse environmental impacts. To cope with this situation, the Chinese government wants to fulfil 25% of its energy consumption by non-fossil fuels by 2030. In this perspective, we selected the solar sources of the country and collected solar irradiation data ...

In September 2003, China's first solar tour vessel was put into use on the water in the Summer Palace. In 2010, China's first independently designed solar and fuel hybrid tour vessel was ...

Solar energy provides desired thermal energy for diverse applications, including industrial heating, domestic cooking, power generation, desalination, and agri-food preservation. Despite extensive research on solar drying from the scientific community, there are limited practical applications for small-scale use. This review attempts to analyze the design features ...

In September 2003, China's first solar tour vessel was put into use on the water in the Summer Palace. In 2010, China's first independently designed solar and fuel hybrid tour vessel was launched on the Huangpu River. Recently, research institutes and universities such as the China Ship and Ocean

For the average homeowner, powering 100% of your home with solar energy is equivalent to removing the emissions created by driving 19,316 miles per year in a typical car--a tremendous environmental benefit..

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About 60% of the electricity that power plants generate in the U.S. comes from fossil fuels like coal and natural gas--but extracting and burning fossil fuels ...

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Solar Energy-Powered Boats: Examines primary applications of solar energy in the maritime sector. Hybrid System on Ro-Ro Ship : A tailored energy system design for a real-sized tanker. Floating photovoltaic systems are faced with unique challenges and opportunities; studies focus on the technical aspects crucial for successful implementation in the marine ...

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