



LLSE CONTAINERS

High-efficiency photovoltaic containers used in oil refineries in Saudi Arabia





Overview

The purpose of this study is to investigate the potential use of solar energy within an oil refinery to reduce its fossil fuel consumption and greenhouse gas emissions. A validated ASPEN HYSYS model w.

Can solar-assisted petrochemical refineries greenize oil refineries?

This paper proposes a solar-assisted method for a petrochemical refinery, considering hydrogen production deployed in Yanbu, Saudi Arabia, as a case study to greenize oil refineries.

Can solar energy be used in oil refineries?

Hydrogen is a significant raw material in petrochemical hydrogenation process (e.g., hydrocracking, hydrotreating), whereas steam has multiple uses within a refinery. Other studies on solar-thermal-assisted refineries are summarized here as follows. In Absi Halabi et al. , the application of solar energy in the oil industry is reviewed.

Can solar energy systems decarbonize oil refineries?

Other studies in the literature considered coupling solar energy systems to oil refineries to decarbonize their operation. The applicability and feasibility of introducing a concentrated solar power (CSP) system to reduce partial reliance on process heaters of a crude oil refinery was studied by Danish et al.

Can solar catalytic chemical looping Biomass Refinery produce high purity hydrogen?

A techno-economic analysis of solar catalytic chemical looping biomass refinery for sustainable production of high purity hydrogen. Energy Convers. Manage. 243, 114341 (2021) Mohammed, S.A.; Al-Azawiey, S.S.; Ali, A.H.: Treatment of organic compounds resulting from oil refineries under solar light and reuse it for industrial purpose.



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ABSTRACT: Saudi Arabia receives an average insolation of 6 kWh/m²/day, making it one of the most likely candidates for a country to be using solar energy for meeting its energy needs in ...

[Analysis of a Solar-Assisted Crude Oil Refinery System](#)

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[Powering an oil refinery with solar energy , GlobalSpec](#)

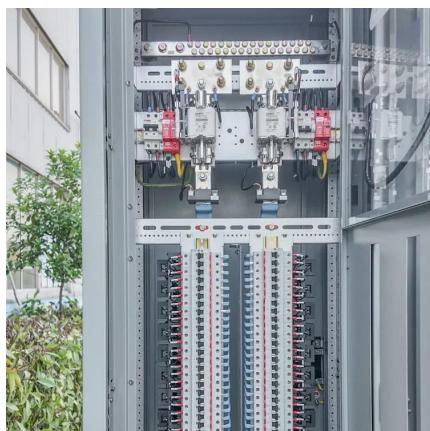
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[Analysis and assessment of using an integrated solar energy ...](#)

Aug 1, 2019 · In large crude oil refineries, keeping emission levels low and minimizing energy losses can primarily be controlled by performing thermo-economic and environmental



...



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[Published at Energy Conversion and management](#)

Jan 30, 2024 · Abstract: Built on the Solar Reactive Utilization framework, this study presents an innovative concept called the Solar Oil Refinery, applying solar energy in the energy ...



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