Single-phase photovoltaic container used in Rome oil refinery

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Can solar hybrid system generate steam in oil refinery?
Conclusion The present study investigates the feasibilityof solar hybrid system to generate steam in the oil refinery to maintain the temperature of heavy crude oil products before despatching from storage tanks. Due to the intermittent behaviour of solar energy,the solar hybrid system is integrated with a sensible heat storage tank.

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 sum-marized here as follows. In Absi Halabi et al. , the application of solar energy in the oil industry is reviewed.

Is solar energy a viable alternative to crude oil?
As is well known,the methods and industries of exploiting,refining,transporting,and trading crude oil are well established. This is not the case with solar energy resources,which,although highly abun-dant,are expensive and not yet implemented at the whole industrial scale. Solar energy is not yet economical to har-vest.

Concerning these solutions Romulo, Lima S et al. made a comparison between energy eficiency in Brazilian and United States crude oil refinery and concluded that increasing the refinery ...

On an industrial scale, one can visualize a solar refinery (see Figure 1) that converts readily available sources of carbon and hydrogen, in the form of CO 2 and water, to ...

The proposed system partially supplements its crude oil heating and electric power requirements with solar energy. Thermal energy storage (TES) tank is employed to ensure un ...

The research team estimated that a CSP system with about 82 acres (330,000 square meters) of solar collectors could deliver steady ...

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.

The research team estimated that a CSP system with about 82 acres (330,000 square meters) of solar collectors could deliver steady-state solar heat for distillation, including ...

In the present case, a loop consists of 6 parabolic solar collectors of 100m and thus a total length of 600m. A larger number of ...

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Herein, a solar multi-energies-driven hybrid chemical oil refining system, exemplified by residual oil cracking, has been ...

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.

In locations with sufficient sunlight and available land, solar generated heat can be integrated into the refining process. Renewable generation can also be used to produce hydrogen, which is ...

The present study investigates the feasibility of solar hybrid system to generate steam in the oil refinery to maintain the temperature of heavy crude oil products before ...

In the present case, a loop consists of 6 parabolic solar collectors of 100m and thus a total length of 600m. A larger number of loops means a larger collector area and a larger ...

On an industrial scale, one can visualize a solar refinery (see Figure 1) that converts readily available sources of carbon and hydrogen, ...

Herein, a solar multi-energies-driven hybrid chemical oil refining system, exemplified by residual oil cracking, has been successfully developed and formulated in solar ...

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