Abstract

Ibrahim S Sedek

Techno-economic approach to solar energy systems onboard marine vehicles

The world is facing the challenge of continuously increasing energy consumption. At the same time, the energy resources are getting scarcer. Despite a sudden significant of fuel prices worldwide, research activities that focus on reducing the dependence on fossil fuels as a traditional source of energy still have the preference in the field of shipping industry. The use of clean and renewable energies, such as solar energy for instance, is proposed as a method to improve the ship efficiency. Ships can get the benefits from solar energy due to the fact that most of their upper decks are always exposed to the Sun, especially in sunny water regions. The present paper discusses the effectiveness and challenges of installing solar panels for auxiliary power production on board a ship. As a case study, the research evaluates both economic and environmental benefits resulting from implementing such concept aboard a research vessel.