

## REVIEW ON COMPARISON OF DIFFERENTSOLAR TECHNIQUES AND THERMAL STORAGE SYSTEM

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### ABSTRACT

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In developing world, the energy requirement is very high, to execute the demands for future need of energy, the renewable sources are to be needed. As usage of fossil fuel is increased day by day and it pollutes the environment. There is an alternate energy source is required it should be protect the environment from the pollutants and also to produce cost-effective. Solar is the best energy source which accomplishes energy requirements with the eco-friendly nature. The parabolic trough collector (PTC) using phase change materials (PCMs) absorbs the solar energy and delivers constant heat to the cooking vessel which have been attempted by experimental model analysis. This review is confined to the enhancement of a PTC is utilized as the source of heat and TES (Thermal storage system) and PCMs for intermediate energy storage. The review covers different solar techniques and TES and tracking system.

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### INTRODUCTION

In present era, the power generated commonly by fossil fuels, which emits huge amount of carbon dioxide which are major pollutants of the environment. As there is a great demand for green energy, the solar power is one of the fastest growing forces in the market. Earth's energy is the main source of the sun. All air, hydro and biomass energy have their appearance from sunlight. The total output of solar energy is  $3.8 \times 10^{20}$  MW which is equal to 63MW/m<sup>2</sup> of the sun surfaces, in all the directions. Just a small fraction  $1.7 \times 10^{14}$  KW of total energy falls to the earth's surface (Kreith, *et al.*, 1978) which means all the solar energy received from the sun in 30 min is equal to one year of global energy needs. (Panwara, *et al.*, 2011) suggested that solar energy is eco-friendly energy source will not affect climate conditions, human health but unlike fossil fuel and other energy sources, which releases green air gases such as CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, CFCS, and Helens, raising Earth's surface temperature (Panwara, *et al.*, 2011).

There are many applications for solar power, i.e., electricity generation, photochemical, solar cooking purpose, melting and freezing room's etc. Solar thermal technology for low temperature is used in heating and household use and high temperature solar applications are principally for electric power generation. Now-a-days there are many important prospects are there for solar technology development.

### HISTORY OF SOLAR ENERGY

Eighteen hundred years ago, the Greek scientist and Archimedes were attacked the Roman naval by using the hundreds of shiny polished shields which absorbs solar energy and reflecting at the same instant (Anderson, 1977). In 1878 August Monset invented a generator to convert low-power sunlight into a generator and run steam apparatus but this terminology was ignored by the French government due to its higher expense (Meinel and Meinel, 1976). The Monsanto solar collectors are significantly predictable by creating a precise cone reflective shape; with silver-metal plates are 5.4 m

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