

ABSTRACT

The depletion of conventional energy sources and their adverse effects on the environment have fetched the attention of global researchers on the renewable sources of energy. Solar energy is freely and abundantly available and can be effectively utilized in many domestic/industrial applications. Cooking being one of the biggest consumers of energy is an essential component of human lives. Using wood or cow dung as primary source of thermal energy for cooking lead to harmful pollution and unhealthy global environment. The cooking utilizing the solar energy has evolved with many updates over the last few decades.

This review focuses on the recent developments in solar cooking, its components, and heat transfer characteristics. Over the period of time, various geometrical modifications have improved the cooking performance especially in box type solar cooker. Use of reflectors and transparent insulating material has improved the performance significantly. Cooking integrated with other technologies is thermally advantageous and economical. The use of energy storage mediums improved the performance during non-sunshine hours. Use of phase change materials as storage medium has higher impact while, sensible heat storage mediums have proved to be more affordable. Social and economic acceptance must be achieved with better policy implications. The solar cooking technology needs an approach for development to enhance its performance, affordability, and usefulness.