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A DISCUSSION OF HOW TO IMPROVE THE PERFORMANCE OF SOLAR COLLECTORS

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ABSTRACT

Renewable energy sources are thought to represent the future, given the fast depletion of traditional energy sources and the environmental damage caused by their overexploitation. Renewable energy technologies vary significantly from one another, not only in terms of technical and economic factors, but also in terms of their dependability, maturity, and utility-scale operating experience. Solar energy technologies have emerged as the most promising and mature, owing to the fact that solar energy is plentiful, free, and has economic potential. This article provides an overview of recent developments in the field of solar thermal technology, with an emphasis on methods for improving its performance. It also includes a description of several kinds of solar collectors to aid in the systematic knowledge of solar thermal technology, as well as the new modifications made in each category of solar collectors to encourage the use of solar energy in everyday activities. Geometrical modifications to the absorber plate, the application of solar selective coatings, and Nanofluids have all been highlighted as performance improvement methods.

KEYWORDS: *Artificial Roughness, Coatings, Heat Transfer, Nano Fluids, Solar Energy*

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