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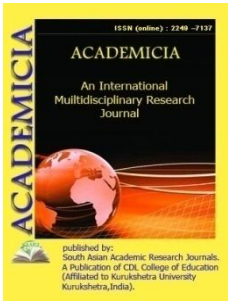

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A STUDY OF THE ECONOMICS AND USES OF PHOTOVOLTAIC THERMAL HYBRID SOLAR TECHNOLOGY

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ABSTRACT

Photovoltaic technology has advanced rapidly in recent years; with studies showing that only around 20% of solar energy is turned into electricity, while more than 50% of incoming solar radiation is converted into heat. By eliminating the surplus heat, the electrical efficiency and operating temperature of PV modules may be increased. As a result, the PVT collector, a hybrid collector, was born. PV cell cooling has become an essential research topic in order to enhance PV panel efficiency, power output, and performance characteristics. For several hybrid PVT solar collector designs, many theoretical, experimental, and economic investigations have been conducted. In various applications, other alternative concepts may be better. This article examines the historical and current trends in PVT technology development, focusing on the performance and economic feasibility of PVT systems in various application areas. Future suggestions and critical evaluations will be made in order to overcome the obstacles and difficulties that are preventing the advancement of PVT technology.

KEYWORDS: *Efficiency, Photovoltaic, Photovoltaic Thermal (PVT), Solar Energy, Thermal.*

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