

DEVELOP A WORKING MODEL TO BOOST SOLAR PANEL EFFICIENCY BY TACKLING DUST AND MOISTURE ACCUMULATION CHALLENGES, CRUCIAL FACTORS AFFECTING PERFORMANCE

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ABSTRACT

Due to its widespread availability and inexpensive cost of energy conversion, solar power has become a popular option among renewable energy sources. Among the most complete methods of utilizing copious solar energy is the use of photovoltaic (PV) systems. However, one major obstacle to obtaining the optimal performance of PV technology is the need to maintain ideal operating temperature. Maintaining constant surface temperatures is critical to PV systems' efficacy. This review looks at the latest developments in PV cooling technologies, including passive, active, and combined cooling methods, and methods for their

assessment. As advances in research and innovation progress within this domain, it will be crucial to tackle hurdles like affordability, maintenance demands, and performance in extreme conditions, to enhance the efficiency and widespread use of PV cooling methods. In essence, PV cooling stands as a vital element in the ongoing shift towards sustainable and renewable energy sources.

Keywords: PV cooling; classification of PV cooling; assessment methods; temperature reduction; electrical efficiency

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Thanking you