Special Issue

Recent Advances in Mathematical Modeling, Analysis and Optimization of Photovoltaic/Thermal System

Message from the Guest Editor

Solar energy applications focused on photovoltaic/thermal (PVT) systems continue becoming increasingly common as the utilization of renewable energy sources expands significantly. The PVT system is widely used in different applications to produce electrical or thermal energy in different regions and continental zones. The main difficulties in PVT systems are brought about by the complexity, nonlinearity, and instability in the mathematical and the electrical model through the current–voltage and power–voltage characteristics. According to several variables, including module temperature, solar radiation and its distribution, spectrum, cable losses, dust deposition, shading, and soiling, and the relationship across photovoltaic current and voltage, is implicit and nonlinear. As a result, it is crucial to develop a more precise mathematical model that can more accurately depict the interaction among current, voltage, and power and show the real performance...

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