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1st Edition

# Machine Learning and the Internet of Things in Solar Power Generation

Edited By [Prabha Umapathy](#), [D. Hemanth](#), [Shelej Khera](#), [Abinaya Inbamani](#), [Suman Lata Tripathi](#)


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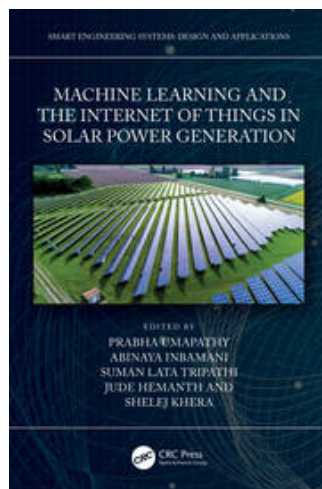
The book investigates various MPPT algorithms, and the optimization of solar energy using machine learning and deep learning. It will serve as an ideal reference text for senior undergraduate, graduate students, and academic researchers in diverse engineering domains including electrical, electronics and communication, computer, and environmental.

This book:

- Discusses data acquisition by the internet of things for real-time monitoring of solar cells.
- Covers artificial neural network techniques, solar collector optimization, and artificial neural network applications in solar heaters, and solar stills.
- Details solar analytics, smart centralized control centers, integration of microgrids, and data mining on solar data.
- Highlights the concept of asset performance improvement, effective forecasting for energy production, and Low-power wide-area network applications.
- Elaborates solar cell design principles, the equivalent circuits of single and two diode models, measuring idealist factors, and importance of series and shunt resistances.

The text elaborates solar cell design principles, the equivalent circuit of single diode model, the equivalent circuit of two diode model, measuring idealist factor, and importance of series and shunt resistances. It further discusses perturb and observe technique, modified P&O method, incremental conductance method, sliding control method, genetic algorithms, and neuro-fuzzy methodologies. It will serve as an ideal reference text for senior undergraduate, graduate students, and academic researchers in diverse engineering domains including electrical, electronics and communication, computer, and environmental.

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