

A practical, application-oriented text that presents analytical results for the better modeling and control of power converters in integration of green energy in electric power systems

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The combined technology of power semiconductor switching devices, pulse width modulation algorithms, and control theories are being further developed along with the performance improvement of power semiconductors and microprocessors so that more efficient, reliable, and cheaper electric energy conversion can be achieved within the next decade. *Integration and Control of Renewable Energy in Electric Power Systems* covers the principles, analysis, and synthesis of closed loop control of pulse width modulated converters in power electronics systems, with special application emphasis on distributed generation systems and uninterruptible power supplies.

The authors present two versions of a documented simulation test bed for homework problems and projects based on Matlab/Simulink, designed to help readers understand the content through simulations. The first consists of a number of problems and projects for classroom teaching convenience and learning. The second is based on the most recent work in control of power converters for the research of practicing engineers and industry researchers.

- Addresses a combination of the latest developments in control technology of pulse width modulation algorithms, and digital control methods
- Problems and projects have detailed mathematical modeling, control design, solution steps, and results
- Uses a significant number of tables, circuit and block diagrams, and waveform plots with well-designed, class-tested problems/solutions and projects designed for the best teaching-learning interaction
- Provides computer simulation programs as examples for ease of understanding and platforms for the projects

Covering major power conversion applications that help professionals from a variety of industries, *Integration of Green and Renewable Energy in Electric Power Systems* provides practical, oriented system analysis and synthesis that is instructional and inspiring for practicing electrical engineers and researchers as well as undergraduate and graduate students.

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