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DC/AC Converters: Analysis, Modeling and Design Consideration

Nikolay Hinov

This book provides a comprehensive and unified approach to the analysis, modeling, and design of DC/AC converters, which are at the core of modern power electronics. Covering current source, voltage source, and resonant inverter topologies, the text bridges theoretical foundations with practical engineering applications.

The monograph offers the following:

- Detailed mathematical models and simulation examples in MATLAB/Simulink and LTspice.
- Unified analytical methodologies for steady-state and transient operation.
- Practical design guidelines for engineers, researchers, and students.
- Case studies and design methodologies validated through real-world applications.

This book is dedicated to the 50th anniversary of the Department of Power Electronics at the Technical University of Sofia. It pays tribute to the tradition, innovation, and academic excellence of the Bulgarian school of power electronics, while providing a forward-looking reference for the next generation of researchers and engineers in the field of sustainable energy systems.



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