Impedance Source Power Electronic Converters brings together state of the art knowledge and cutting edge techniques in various stages of research related to the ever more popular impedance source converters/inverters.

Significant research efforts are underway to develop commercially viable and technically feasible, efficient and reliable power converters for renewable energy, electric transportation and for various industrial applications. This book provides a detailed understanding of the concepts, designs, controls, and application demonstrations of the impedance source converters/inverters.

Key features:

• Comprehensive analysis of the impedance source converter/inverter topologies, including typical topologies and derived topologies.

• Fully explains the design and control techniques of impedance source converters/inverters, including hardware design and control parameter design for corresponding control methods.

• Presents the latest power conversion solutions that aim to advance the role of power electronics into industries and sustainable energy conversion systems.

• Compares impedance source converter/inverter applications in renewable energy power generation and electric vehicles as well as different industrial applications.

• Provides an overview of existing challenges, solutions and future trends.
• Supported by calculation examples, simulation models and results.

Highly accessible, this is an invaluable resource for researchers, postgraduate/graduate students studying power electronics and its application in industry and renewable energy conversion as well as practising R&D engineers. Readers will be able to apply the presented material for the future design of the next generation of efficient power electronic converters/inverters.

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