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Sommario/riassunto

Ultra-capacitors, used as short-term energy storage devices, are growing in popularity especially in the transportation and renewable energy sectors. This text provides an up-to-date and comprehensive analysis of ultra-capacitor theory, modeling, and module design from an application perspective, focusing on the practical aspects of power conversion and ultra-capacitor integration with power electronics systems.Key features: . clearly explains the theoretical and practical aspects of ultra-capacitor, analysis, modeling, and design . describes different power conversion applications such as variable speed drives, renewable energy systems, traction, power quality, diesel electric hybrid applications . provides detailed guidelines for the design and selection of ultra-capacitor modules and interface dc-dc converters . includes exercises and design examplesThis is an essential reference for power electronics engineers and professionals wanting to expand their knowledge of advanced ultra-capacitor energy storage devices and their application in power conversion. It is also a valuable resource for industrial design engineers as well as academics and advanced students in power electronics who want to develop their understanding about this highly topical subject.