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Nota di contenuto	Preface ix -- 1 Energy Storage Technologies and Devices 1 -- 1.1 Introduction 1 -- 1.1.1 Energy 1 -- 1.1.2 Electrical Energy and its Role in Everyday Life 1 -- 1.1.3 Energy Storage 2 -- 1.2 Direct Electrical Energy Storage Devices 3 -- 1.2.1 An Electric Capacitor as Energy Storage 3 -- 1.2.2 An Inductor as Energy Storage 8 -- 1.3 Indirect Electrical Energy Storage Technologies and Devices 11 -- 1.3.1 Mechanical Energy Storage 11 -- 1.3.2 Chemical Energy Storage 15 -- 1.4 Applications and Comparison 19 -- 2 Ultra-Capacitor Energy Storage Devices 22 -- 2.1 Background of Ultra-Capacitors 22 -- 2.1.1 Overview of Ultra-Capacitor Technologies 22 -- 2.2 Electric Double-Layer Capacitors-EDLC 24 -- 2.2.1 A Short History of the EDLC 24 -- 2.2.2 The Ultra-Capacitor's Structure 24 -- 2.2.3 The Ultra-Capacitor's Physical Model 24 -- 2.3 The Ultra-Capacitor Macro (Electric Circuit) Model 27 -- 2.3.1 Full Theoretical Model 27 -- 2.3.2 A Simplified Model 36 -- 2.3.3 A Simulation/Control Model 39 -- 2.3.4 Exercises 41 -- 2.4 The Ultra-Capacitor's Energy and Power 42 -- 2.4.1 The Ultra-Capacitor's Energy and Specific Energy 42 -- 2.4.2 The Ultra-Capacitor's Energy Efficiency 43 -- 2.4.3 The Ultra-Capacitor's Specific

Power 44 -- 2.4.4 The Electrode Carbon Loading Limitation 45 -- 2.4.5 Exercises 45 -- 2.5 The Ultra-Capacitor's Charge/Discharge Methods 47 -- 2.5.1 Constant Resistive Loading 47 -- 2.5.2 Constant Current Charging and Loading 47 -- 2.5.3 Constant Power Charging and Loading 51 -- 2.5.4 Exercises 57 -- 2.6 Frequency Related Losses 59 -- 2.6.1 The Current as a Periodic Function 60 -- 2.6.2 The Current as a Nonperiodic Function 64 -- 2.7 The Ultra-Capacitor's Thermal Aspects 65 -- 2.7.1 Heat Generation 65 -- 2.7.2 Thermal Model 66 -- 2.7.3 Temperature Rise 66 -- 2.7.4 Exercises 69 -- 2.8 Ultra-Capacitor High Power Modules 72 -- 2.9 Ultra-Capacitor Trends and Future Development 74 -- 2.9.1 The Requirements for Future Ultra-Capacitors 74 -- 2.9.2 The Technology Directions 75.

2.10 Summary 76 -- 3 Power Conversion and Energy Storage Applications 78 -- 3.1 Fundamentals of Static Power Converters 78 -- 3.1.1 Switching-Mode Converters 78 -- 3.1.2 Power Converter Classification 80 -- 3.1.3 Some Examples of Voltage-Source Converters 80 -- 3.1.4 Indirect Static AC-AC Power Converters 81 -- 3.2 Interest in Power Conversion with Energy Storage 84 -- 3.2.1 Definition of the Problem 84 -- 3.2.2 The Solution 85 -- 3.2.3 Which Energy Storage is the Right Choice? 86 -- 3.2.4 Electrochemical Batteries versus Ultra-Capacitors 87 -- 3.3 Controlled Electric Drive Applications 90 -- 3.3.1 Controlled Electric Drives from Yesterday to Today 90 -- 3.3.2 Application of Controlled Electric Drives 93 -- 3.3.3 Definition of the Application Problems 93 -- 3.3.4 The Solution 97 -- 3.4 Renewable Energy Source Applications 102 -- 3.4.1 Renewable Energy Sources 102 -- 3.4.2 Definition of the Problem 107 -- 3.4.3 Virtual Inertia and Renewable Energy 'Generators' 111 -- 3.4.4 The Solution 113 -- 3.5 Autonomous Power Generators and Applications 113 -- 3.5.1 Applications 113 -- 3.5.2 Definition of the Problem 118 -- 3.5.3 The Solution 120 -- 3.6 Energy Transmission and Distribution Applications 121 -- 3.6.1 STATCOM Applications 121 -- 3.6.2 Definition of the Problems 122 -- 3.6.3 The Solution 126 -- 3.7 Uninterruptible Power Supply (UPS) Applications 128 -- 3.7.1 UPS System Applications 128 -- 3.7.2 UPS with Ultra-Capacitor Energy Storage 130 -- 3.8 Electric Traction Applications 131 -- 3.8.1 Rail Vehicles 132 -- 3.8.2 Road Vehicles 134 -- 3.8.3 A Generalized Traction System 141 -- 3.9 Summary 145 -- 4 Ultra-Capacitor Module Selection and Design 149 -- 4.1 Introduction 149 -- 4.1.1 The Analysis and Design Objectives 149 -- 4.1.2 Main Design Steps 150 -- 4.1.3 The Ultra-Capacitor Model 151 -- 4.2 The Module Voltage Rating and Voltage Level Selection 152 -- 4.2.1 Relation between the Inner and Terminal Voltages 153 -- 4.2.2 Maximum Operating Voltage 154 -- 4.2.3 Minimum Operating Voltage 155.

4.2.4 The Ultra-Capacitor Intermediate Voltage 156 -- 4.2.5 The Ultra-Capacitor Rated Voltage 160 -- 4.2.6 Exercises 162 -- 4.3 The Capacitance Determination 164 -- 4.3.1 Energy Storage/Recovery Capability 164 -- 4.3.2 Conversion Efficiency 164 -- 4.3.3 End-of-Life Effect on the Capacitance Selection 171 -- 4.3.4 Exercises 172 -- 4.4 Ultra-Capacitor Module Design 173 -- 4.4.1 Series/Parallel Connection 173 -- 4.4.2 Current Stress and Losses 176 -- 4.4.3 String Voltage Balancing 178 -- 4.4.4 Exercises 186 -- 4.5 The Module's Thermal Management 189 -- 4.5.1 The Model's Definition 190 -- 4.5.2 Determination of the Model's Parameters 192 -- 4.5.3 The Model's Parameters-Experimental Identification 193 -- 4.5.4 The Cooling System Design 194 -- 4.5.5 Exercises 197 -- 4.6 Ultra-Capacitor Module Testing 207 -- 4.6.1 Capacitance and Internal Resistance 208 -- 4.6.2 Leakage Current and Self-Discharge 212 -- 4.7 Summary 214 -- 5 Interface DC-DC Converters 216 -- 5.1 Introduction 216 -- 5.2

Background and Classification of Interface DC-DC Converters 216 --  
5.2.1 Voltage and Current Source DC-DC Converters 218 -- 5.2.2 Full  
Power and Fractional Power Rated Interface -- DC-DC Converters 220  
-- 5.2.3 Isolated and Non-Isolated Interface DC-DC Converters 220 --  
5.2.4 Two-Level and Multi-Level Interface DC-DC Converters 222 --  
5.2.5 Single-Cell and Multi-Cell Interleaved Interface -- DC-DC  
Converters 222 -- 5.3 State-of-the-Art Interface DC-DC Converters  
223 -- 5.3.1 Two-Level DC-DC Converters 223 -- 5.3.2 Three-Level  
DC-DC Converters 225 -- 5.3.3 Boost-Buck and Buck-Boost DC-DC  
Converters 226 -- 5.3.4 Isolated DC-DC Converters 226 -- 5.3.5  
Application Summary 227 -- 5.4 The Ultra-Capacitor's Current and  
Voltage Definition 229 -- 5.5 Multi-Cell Interleaved DC-DC Converters  
231 -- 5.5.1 Background of Interleaved DC-DC Converters 231 --  
5.5.2 Analysis of a Two-Cell Interleaved Converter 233 -- 5.5.3 N-Cell  
General Case Analysis 239 -- 5.6 Design of a Two-Level N-Cell  
Interleaved DC-DC Converter 254.  
5.6.1 ICT Design: A Two-Cell Example 254 -- 5.6.2 The Filter Inductor  
Design 261 -- 5.6.3 DC Bus Capacitor Selection 268 -- 5.6.4 Output  
Filter Capacitor Selection 274 -- 5.6.5 Power Semiconductor Selection  
277 -- 5.6.6 Exercises 286 -- 5.7 Conversion Power Losses: A General  
Case Analysis 295 -- 5.7.1 The Origin of the Losses 295 -- 5.7.2  
Conduction Losses 297 -- 5.7.3 Switching Losses 297 -- 5.7.4  
Blocking Losses 299 -- 5.7.5 Definition of the Moving Average and RMS  
Value 299 -- 5.8 Power Converter Thermal Management: A General  
Case Analysis 299 -- 5.8.1 Why is Thermal Management Important?  
299 -- 5.8.2 Thermal Model of Power Semiconductors 300 -- 5.8.3  
Thermal Model of Magnetic Devices 306 -- 5.8.4 Thermal Model of  
Power Electrolytic Capacitors 309 -- 5.9 Summary 313 -- References  
314 -- Index 317.

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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 examples This 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.

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