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Based Nanocomposites; 9 Conclusion; Acknowledgments; References; Chapter 5 - EVs and HEVs: The Need and Potential Functions of Batteries for Future Systems; 1 Introduction; 2 Power Performance Analysis of Batteries; 3 Basic Performance Design of Vehicles; 4 Thermal Analysis and Design; 5 Battery Pack System Establishment
6 High-Power Performance of Lithium-Ion BatteriesReferences; 6 - Manufacturing Costs of Batteries for Electric Vehicles; 1 Introduction; 2 Performance and Cost Model; 3 Battery Parameters Affecting Cost; 4 Uncertainty in Point Price Estimates; 5 Effect of Manufacturing Scale; 6 Outlook; Acknowledgments; References; Chapter 7 - Lithium-Ion Battery Packs for EVs; 1 Introduction; 2 Lithium-Ion Battery Design Considerations; 3 Rechargeable Energy Storage Systems; 4 Testing and Analysis; 5 Applications of Electric Vehicle Rechargeable Energy Storage Systems; 6 Conclusions; References
Chapter 8 - The Voltec System-Energy Storage and Electric Propulsion1 Introduction; 2 A Brief History of Electric Vehicles; 3 Extended-Range Electric Vehicles; 4 The Voltec Propulsion System; 5 Voltec Drive Unit and Vehicle Operation Modes; 6 Battery Operation Strategy; 7 Development and Validation Processes; 8 Vehicle Field Experience; 9 Summary; Acknowledgments; References; Chapter 9 - Transit Bus Applications of Lithium-Ion Batteries: Progress and Prospects; 1 Introduction; 2 Integration of Lithium-Ion Batteries in Electric Drive Buses
3 Examples of HEB/EB Transit Buses with LIB-Based Rechargeable Energy Storage Systems (RESS)

Sommario/riassunto

Lithium-Ion Batteries features an in-depth description of different lithium-ion applications, including important features such as safety and reliability. This title acquaints readers with the numerous and often consumer-oriented applications of this widespread battery type. Lithium-Ion Batteries also explores the concepts of nanostructured materials, as well as the importance of battery management systems. This handbook is an invaluable resource for electrochemical engineers and battery and fuel cell experts everywhere, from research institutions and universities to a