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| Nota di contenuto | Chapter 1: State-of-the-art reviews to develop lithium-ion batteries for hybrid and electric vehicles -- Chapter 2: Electrified and Alternative Powertrain Technologies Toward Net-Zero Carbon Emissions -- Chapter 3: Fundamental and Modelling Aspects of Fuel Cell -- Chapter 4: Heat Transport and Thermal Management for Fuel Cell -- Chapter 5: Recent developments in BTMSs (BTMSs) and Advanced Battery Management Technologies for EVs -- Chapter 6: Developments in Electro-Catalyst for Fuel Cell-Based Transportation -- Chapter 7: Advancements, Challenges, and Opportunities in Lithium-Ion Batteries for Hybrid and Electric Vehicles: A Comprehensive Review -- Chapter 8: Recent Developments and Advanced Technologies of Battery Management Systems in Electric Vehicle Applications -- Chapter 9: Prospects of Open Cathode Fuel Cells in Future Powertrains -- Chapter 10: Progress in Design and Development of Battery Thermal Management System for Electric Vehicles -- Chapter 11: Prospects and Challenges of Electric Vehicles (EVs), Hybrid Electric Vehicles (HEVs), Pure Electric Vehicles (PEVs), and Plug-in Electric Vehicles (PHEVs) -- Chapter 12: Heat Transfer and Thermal Management for Fuel Cells. |

This book explores advanced powertrain technologies aimed at reducing greenhouse gas (GHG) emissions and accelerating the transition to sustainable mobility. As regulatory bodies push for alternatives to internal combustion engines (ICEs), battery electric vehicles (BEVs), hybrid electric vehicles (HEVs), plug-in hybrid electric vehicles (PHEVs), and fuel cell-based powertrains are emerging as viable solutions. However, challenges such as battery safety, thermal management, and fuel cell efficiency require further research and innovation. This book presents state-of-the-art developments in lithium-ion batteries, fuel cell modeling, battery thermal management systems (BTMSs), and electro-catalyst advancements for fuel cell transportation. It also discusses the technological, environmental, and regulatory challenges associated with electrified powertrains. By providing insights into recent advancements and future prospects, this book serves as a valuable resource for researchers, engineers, and policymakers striving to develop efficient and sustainable vehicle technologies.
