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Sommario/riassunto

Addresses the methodology and theoretical foundation of battery manufacturing, service and management systems (BM 2</sup>S 2</sup>), and discusses the issues and challenges in these areas This book brings together experts in the field to highlight the cutting edge research advances in BM 2</sup>S 2</sup> and to promote an innovative integrated research framework responding to the challenges. There are three major parts included in this book: manufacturing, service, and management. The first part focuses on battery manufacturing systems, including modeling, analysis, design and control, as well as economic and risk analyses. The second part focuses on information technology's impact on service systems, such as data-driven reliability modeling, failure prognosis, and service decision making methodologies for battery services. The third part addresses battery management systems (BMS) for control and optimization of battery cells, operations, and hybrid storage systems to ensure overall performance and safety, as well as EV management. The contributors consist of experts from universities, industry research centers, and government agency. In addition, this book: . Provides comprehensive overviews of lithium-ion battery and battery electrical vehicle manufacturing, as well as economic returns and government support. Introduces integrated models for quality propagation and productivity improvement, as well as indicators for bottleneck identification and mitigation in battery manufacturing. Covers models and diagnosis algorithms for battery SOC and SOH estimation, data-driven prognosis algorithms for predicting the remaining useful life (RUL) of battery SOC and SOH. Presents mathematical models and novel structure of battery equalizers in battery management systems (BMS). Reviews the state of the art of battery, supercapacitor, and battery-supercapacitor hybrid energy storage systems (HESSs) for advanced electric vehicle applications Advances in Battery Manufacturing, Services, and Management Systems is written for researchers and engineers working on battery manufacturing, service, operations, logistics, and management. It can also serve as a reference for senior undergraduate and graduate students interested in BM 2</sup>S 2</sup>.