Record Nr. UNINA9910741167403321 Autore Huang Qi Titolo Long-Term Health State Estimation of Energy Storage Lithium-Ion Battery Packs / / by Qi Huang, Shunli Wang, Zonghai Chen, Ran Xiong, Carlos Fernandez, Daniel-I, Stroe Singapore:,: Springer Nature Singapore:,: Imprint: Springer,, 2023 Pubbl/distr/stampa **ISBN** 981-9953-44-8 Edizione [1st ed. 2023.] Descrizione fisica 1 online resource (101 pages) Altri autori (Persone) WangShunli ChenZonghai XiongRan FernandezCarlos StroeDaniel-I Disciplina 621.3126 Soggetti Energy storage Electronics - Materials Mathematical models Mechanical and Thermal Energy Storage **Electronic Materials** Mathematical Modeling and Industrial Mathematics Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di contenuto Chapter 1 Introduction -- Chapter 2 Electrochemical modeling of energy storage lithium battery -- Chapter 3 Extraction of multidimensional health indicators based on lithium-ion batteries --Chapter 4 Research on health state estimation method of the lithiumion battery pack -- Chapter 5 Experimental verification and analysis of health state estimation for lithium-ion battery pack.

Sommario/riassunto

This book investigates in detail long-term health state estimation technology of energy storage systems, assessing its potential use to replace common filtering methods that constructs by equivalent circuit model with a data-driven method combined with electrochemical modeling, which can reflect the battery internal characteristics, the battery degradation modes, and the battery pack health state. Studies

on long-term health state estimation have attracted engineers and scientists from various disciplines, such as electrical engineering, materials, automation, energy, and chemical engineering. Pursuing a holistic approach, the book establishes a fundamental framework for this topic, while emphasizing the importance of extraction for health indicators and the significant influence of electrochemical modeling and data-driven issues in the design and optimization of health state estimation in energy storage systems. The book is intended for undergraduate and graduate students who are interested in new energy measurement and control technology, researchers investigating energy storage systems, and structure/circuit design engineers working on energy storage cell and pack.