



# Design and Analysis of Large Lithium-Ion Battery Systems (Power Engineering)

By Shriram Santhanagopalan, Kandler Smith, Jeremy Neubauer, Gi-Heon Kim, Ahmad Pesaran, Matthew Keyser

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This new resource provides you with an introduction to battery design and test considerations for large-scale automotive, aerospace, and grid applications. It details the logistics of designing a professional, large, Lithium-ion battery pack, primarily for the automotive industry, but also for non-automotive applications. Topics such as thermal management for such high-energy and high-power units are covered extensively, including detailed design examples.

Every aspect of battery design and analysis is presented from a hands-on perspective. The authors work extensively with engineers in the field and this book is a direct response to frequently-received queries. With the authors' unique expertise in areas such as battery thermal evaluation and design, physics-based modeling, and life and reliability assessment and prediction, this book is sure to provide you with essential, practical information on understanding, designing, and building large format Lithium-ion battery management systems.

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## **Editorial Review**

### **About the Author**

Shriram Santhanagopalan is a senior engineer at the Advanced Vehicles Group of the National Renewable Energy Laboratory. Kandler Smith is a vehicle energy storage engineer at National Renewable Energy Laboratory. Jeremy Neubauer is a energy storage modeling and simulation task leader at National Renewable Energy Laboratory. Gi-Heon Kim is a senior research engineer at National Renewable Energy Laboratory. Ahmad Pesaran is a principal engineer at National Renewable Energy Laboratory. Matthew Keyser is a senior engineer at National Renewable Energy Laboratory.

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