



# The Handbook of Lithium-Ion Battery Pack Design: Chemistry, Components, Types and Terminology

By John T Warner

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## **The Handbook of Lithium-Ion Battery Pack Design: Chemistry, Components, Types and Terminology** By John T Warner

*The Handbook of Lithium-Ion Battery Pack Design: Chemistry, Components, Types and Terminology* offers to the reader a clear and concise explanation of how Li-ion batteries are designed from the perspective of a manager, sales person, product manager or entry level engineer who is not already an expert in Li-ion battery design. It will offer a layman's explanation of the history of vehicle electrification, what the various terminology means, and how to do some simple calculations that can be used in determining basic battery sizing, capacity, voltage and energy. By the end of this book the reader has a solid understanding of all of the terminology around Li-ion batteries and is able to do some simple battery calculations.

The book is immensely useful to beginning and experienced engineer alike who are moving into the battery field. Li-ion batteries are one of the most unique systems in automobiles today in that they combine multiple engineering disciplines, yet most engineering programs focus on only a single engineering field. This book provides you with a reference to the history, terminology and design criteria needed to understand the Li-ion battery and to successfully lay out a new battery concept. Whether you are an electrical engineer, a mechanical engineer or a chemist this book helps you better appreciate the inter-relationships between the various battery engineering fields that are required to understand the battery as an Energy Storage System.

- Offers an easy explanation of battery terminology and enables better understanding of batteries, their components and the market place.
- Demonstrates simple battery scaling calculations in an easy to understand description of the formulas
- Describes clearly the various components of a Li-ion battery and their importance
- Explains the differences between various Li-ion cell types and chemistries and enables the determination which chemistry and cell type is appropriate for which application

- Outlines the differences between battery types, e.g., power vs energy battery
- Presents graphically different vehicle configurations: BEV, PHEV, HEV
- Includes brief history of vehicle electrification and its future

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### **Editorial Review**

From the Back Cover

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#### About the Author

Dr John T. Warner, DM, PMP is an experienced sales, product management and strategic marketing executive with 25+ years in the automotive industry. As Vice President of Sales and Marketing for Xalt Energy, Dr Warner leads the growth efforts. Prior to this Dr Warner was Director of Product Management for Large Format Batteries at Li-ion battery start-up Boston-Power, where I lead the large format battery product development and automotive strategy.

Before joining Boston-Power, Dr Warner spent over 12 years at General Motors in various management roles where his latest responsibilities included the short and long-term strategies for diesels and mild-hybrid systems as well as the management of these product portfolios. He received his doctor of management, organizational leadership degree from the University of Phoenix, and his MBA, International Business and Leadership Studies and BA in industrial management from Baker College.

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**Neil Williams:**

Now a day people who Living in the era where everything reachable by connect with the internet and the resources inside it can be true or not need people to be aware of each data they get. How a lot more to be smart in acquiring any information nowadays? Of course the reply is reading a book. Looking at a book can help persons out of this uncertainty Information mainly this The Handbook of Lithium-Ion Battery Pack Design: Chemistry, Components, Types and Terminology book as this book offers you rich data and knowledge. Of course the info in this book hundred percent guarantees there is no doubt in it as you know.

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**Heidi Garcia:**

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