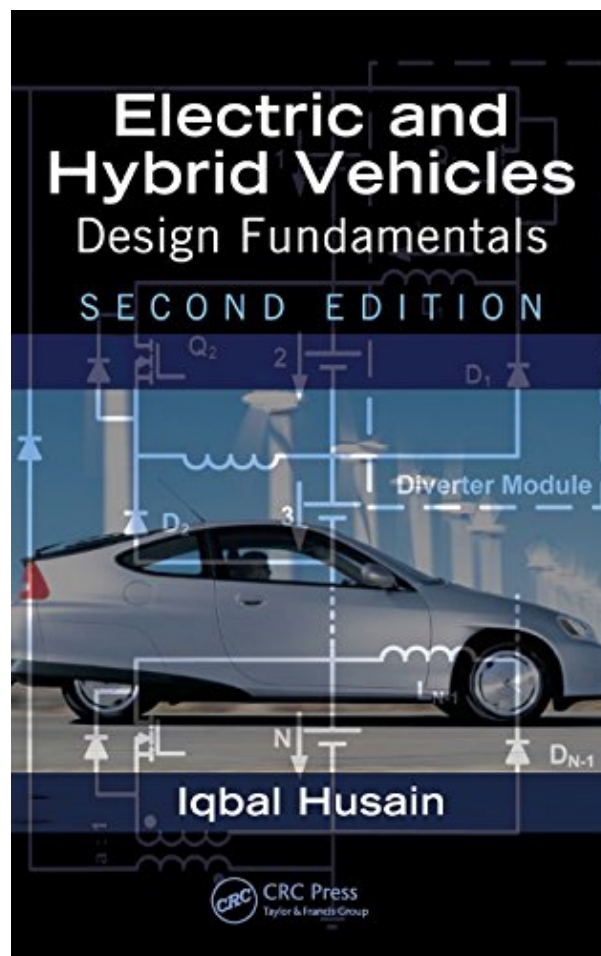
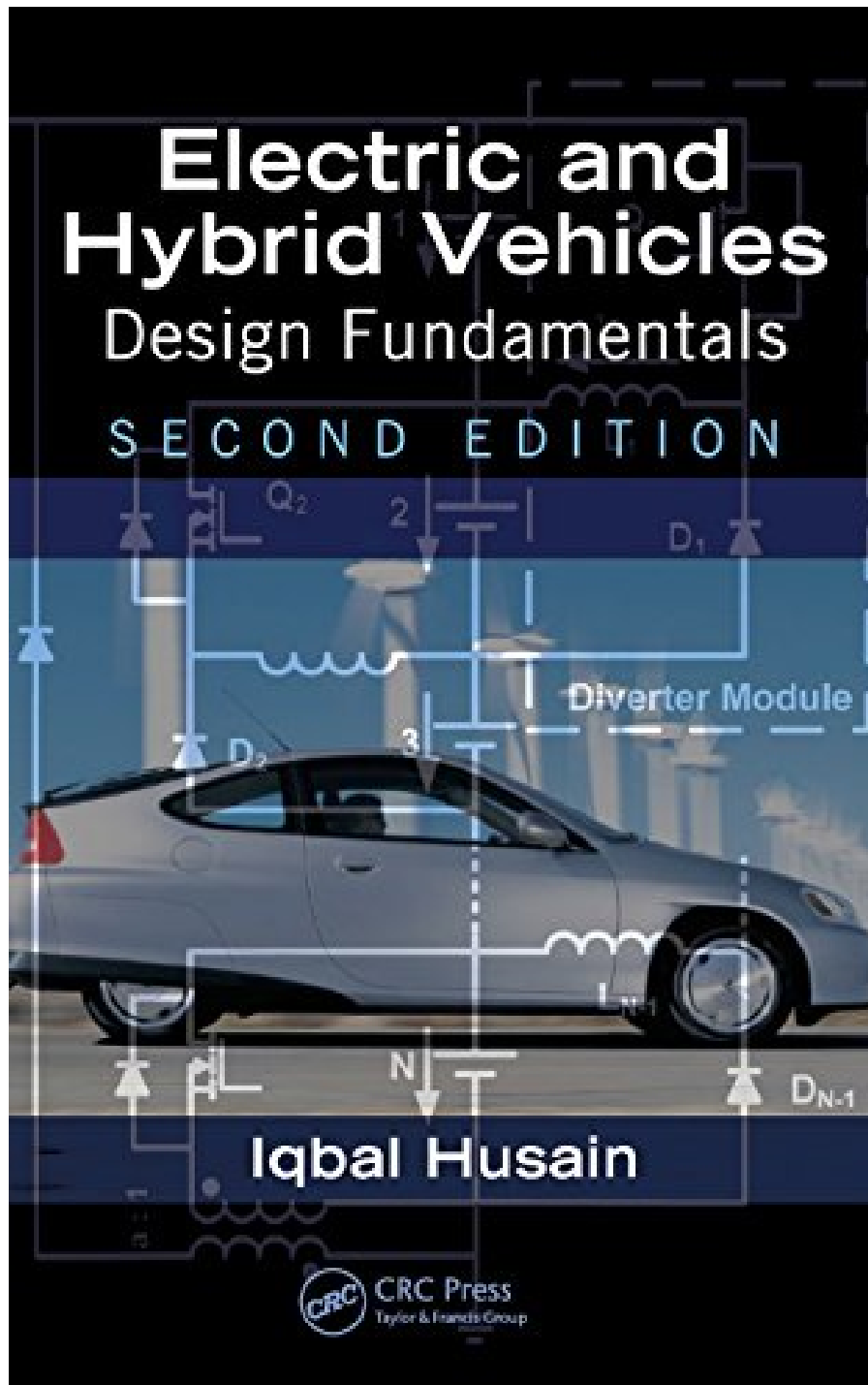


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## Review

Dr. Iqbal Husain takes his new edition of Electric and Hybrid Vehicles: Design Fundamentals to the next level, adding substantial depth to the coverage of vehicle architectures and components while maintaining a comprehensive systems-level approach. The book presents a thorough and well-organized multidisciplinary perspective, excellent for undergraduate and beginning graduate-level courses, and as a resource for practicing engineers interested in the latest developments in electric and hybrid vehicles. The technical content, examples, and case studies are laced with the author's significant hands-on design experience.

?Annette von Jouanne, Professor in the School of Electrical Engineering and Computer Science, Oregon State University, Corvallis, USA

...it seems that the author has covered all materials related to hybrid vehicles. More specifically, various components used in an HEV are described. ... This book is well written and is appropriate for adoption as a textbook for a senior undergraduate/graduate course. In fact, the solved problems and end-of-chapter problems make it a very good textbook. ... it can also be used a reference book. ... There are a few books on the subject of hybrid vehicles in the market today. However, I rank this book among the best on the subject matter. Based on the table of contents and the two chapters that I have reviewed, the book does an excellent job in defining the problem and analyzing all its components.

?Hamid A. Toliyat, Raytheon Endowed Professor in the Department of Electrical & Computer Engineering, Texas A&M University, College Station, USA

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#### About the Author

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Thoroughly updated to encompass the significant technological advances since the publication of the first edition, *Electric and Hybrid Vehicles: Design Fundamentals, Second Edition* presents the design fundamentals, component sizing, and systems interactions of alternative vehicles. This new edition of a widely praised, bestselling textbook maintains the comprehensive, systems-level perspective of electric and hybrid vehicles while covering the hybrid architectures and components of the vehicle in much greater detail. The author emphasizes technical details, mathematical relationships, and design guidelines throughout the text.

## **New to the Second Edition**

- New chapters on sizing and design guidelines for various hybrid architectures, control strategies for hybrid vehicles, powertrain component cooling systems, and in-vehicle communication methods
- New sections on modeling of energy storage components, tire-road force mechanics, compressed air-storage, DC/DC converters, emission control systems, electromechanical brakes, and vehicle fuel economy
- Reorganization of power electronics, electric machines, and motor drives sections
- Enhanced sections on mechanical components that now include more technical descriptions and example problems
- An emphasis on the integration of mechanical and electrical components, taking into account the interdisciplinary nature of automotive engineering

As an advisor to the University of Akron's team in the Challenge X: Crossover to Sustainable Mobility, Dr. Husain knows first-hand how to teach students both the fundamentals and cutting-edge technologies of the next generation of automotives. This text shows students how electrical and mechanical engineers must work together to complete an alternative vehicle system. It empowers them to carry on state-of-the-art research and development in automotive engineering in order to meet today's needs of clean, efficient, and sustainable vehicles.

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7 of 7 people found the following review helpful.

Solid on Fundamentals

By Envoy

Dr. Husain is an Electrical Engineer, therefore his book focuses primarily on the electrical, magnetic, electromagnetic & electromechanical aspects of EV & HEV vehicle design. From this perspective, his book is very solid on fundamental EV & HEV design considerations and component analyses. However, the continuously variable transmission (CVT)... including planetary gearsets (used in CVTs to combine/split torque) is a key HEV component. Consequently, I view omitting their discussion as dissapointing. On the other hand, Dr. Husain's text is very well written/edited and his style of explaining technical details is conversational, yet professional. I recommend this book without hessitation.

8 of 9 people found the following review helpful.

Hard to follow, not much practical information

By JC Reader

This book is very hard to follow. The author presents examples (and sometimes answers) without outlining how to solve the problems. This is very frustrating! Most of the work in the book is calculus-based which would not be a problem if the steps for deriving the equations were more explicit. The information is very theoretical with little practical relevance to electric car design. The author starts out by explaining generic vehicle mechanics and then jumps right into battery chemistry and motors. Very little effort is spent on the interrelationships between these elements. The author does a decent job describing motor fundamentals, but he does not spend much time discussing the practical limitations of the technology. The hybrid discussion is relegated to the last chapter of the book, and then only a few pages are devoted to explaining this technology. Most of the chapter is spent describing various thermodynamic cycles such as the Otto cycle and Rankine cycle. Curiously,at this point the author resorts to a very high level discussion of these cycles, using very little math to show the effects of the electric motor on the function and efficiency of the traditional ICE vehicle.

1 of 1 people found the following review helpful.

Book is great, but I do not like kindle version. I was hoping that I could print partial parts of the book.

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