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Motormouth Lemon-Aid New Cars and Trucks 2012 Lemon-Aid New Cars and Trucks 2010 Lemon-Aid New Cars and Trucks 2011 Focus On: 100 Most Popular Sedans Electric Powertrain Lexus Automobile Year 2006/07 EBOOK: International Marketing Road & Track Lemon-Aid New and Used Cars and Trucks 2007–2018 Toyota Highlander Lexus RX 300/330/350 Haynes Repair Manual Lemon-Aid New and Used Cars and Trucks 2007–2017 Lemon-Aid New Cars and Trucks 2013 The Complete Idiot's Guide to Hybrid and Alternative Fuel Vehicles Entrepreneurship, Innovation and Sustainability Cincinnati Magazine The Motoring Adventures of a Baby Boomer Car Audio For Dummies The Lexus Story Fuel Economy Guide Lemon-Aid New and Used Cars and Trucks 1990–2015 Lemon-Aid New and Used Cars and Trucks 1990–2016 Internal Revenue Bulletin Internal Revenue Cumulative Bulletin The IRS Mission Encyclopedia of Electrochemical Power Sources Lemon-Aid Used Cars and Trucks 2012-2013 Reducing Fuel Consumption and Greenhouse Gas Emissions of Medium- and Heavy-Duty Vehicles, Phase Two The International Vehicle Aerodynamics Conference EBOOK: International Marketing, 5e Kiplinger's Personal Finance History of Electric Cars Electric Car Guide Transportation Energy Data Book New Scientist Modeling and Control of Hybrid Propulsion System for Ground Vehicles Hybrid Electric Vehicles Battery Technology for Electric Vehicles Sustainability Strategies

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As U.S. and Canadian automakers and dealers face bankruptcy and/or unprecedented downsizing, Lemon-Aid guides steer the confused and anxious buyer through the economic meltdown unlike any other car and truck books on the market. Phil Edmonston, Canada's automotive "Dr. Phil" for more than 35 years, pulls no punches. This compendium of everything that's new in cars and trucks is packed with feedback from Canadian drivers, insider tips, internal service bulletins, and confidential memos to help the consumer select what's safe, reliable, and fuel-frugal. Know all about profit margins, rebates, and safety defects. And when things go wrong, fight back! Lemon-Aid's complaint tactics, sample letters, Internet gripe sites, and winning jurisprudence will get you attention — and a refund! A behind-the-scenes look at Lexus's surprising twenty-year success story—in a revised new edition In the 1980s, German brands BMW and Mercedes-Benz dominated the luxury car market and had little reason to fear competition from Japan. But in 1989, Toyota entered the market with the Lexus LS 400, a car that could compete with the Germans in every category but price—it was US\$30,000 cheaper. Within two years, Lexus had overtaken Mercedes-Benz in the United States and made a stunning success of Toyota's brave foray into the global luxury market. Lexus: The Relentless Pursuit reveals why Toyota decided to take on the German automakers and how the new brand won praise and success for its unparalleled quality, unforgettable advertising, and unprecedented customer service. From the first boardroom planning session to Lexus's entry into the mega-luxury supercar market, this is the complete and compelling story of one of the world's most admired brands. Includes a new Foreword by legendary designer Erwin Lui, an Afterword with updates since the first edition, and a new Coda by leading Japanese automotive journalist Hisao Inoue Covers the racetrack triumph—and tragedy—behind the new US\$375,000 Lexus LFA supercar Offers important business lessons for brand managers and executives For car enthusiasts, business leaders, and anyone interested in branding and marketing, Lexus: The Relentless Pursuit offers an amazing story of excellence and innovation in the automotive industry. As U.S. and Canadian automakers and dealers face bankruptcy and Toyota battles unprecedented quality-control problems, Lemon-Aid guides steer the confused and anxious buyer through the economic meltdown unlike any other car-and-truck books on the market. Phil Edmonston, Canada's automotive "Dr. Phil" for more than 40 years, pulls no punches. In this all-new guide he says: Chrysler's days are numbered with the dubious help of Fiat. Electric cars and ethanol power are PR gimmicks. Diesel and natural gas are the future. Be wary of "zombie" vehicles: Jaguar, Land Rover, Saab, and Volvo. Mercedes-Benz -- rich cars, poor quality. There's only one Saturn you should buy. Toyota -- enough apologies: "when you mess up, 'fess up." Steers buyers through the the confusion and anxiety of new and used vehicle purchases like no other car-and-truck book on the market. "Dr. Phil," along with George Iny and the Editors of the Automobile Protection Association, pull no punches. Aerodynamics has never been more central to the development of cars, commercial vehicles, motorbikes, trains and human powered vehicles, driven by the need for efficiency: reducing carbon dioxide emissions, reducing fuel consumption, increasing range and alleviating problems associated with traffic congestion. Reducing vehicle weight makes it more challenging to ensure that they are stable and handle well over a wide range of environmental conditions. Lighter structures are also more vulnerable to aerodynamically induced vibration. Alongside this, customers demand an environment that is quiet, comfortable and maintains their vision of the world around them in all weathers. These aims must be met by designing vehicles that engage customers emotionally, promoting the brand values of

manufacturers and operators. This can only be done by collaboration between designers and aerodynamicists. Examine the latest developments in vehicle aerodynamic development Explore opportunities to network and share experiences around different areas Focus on future challenges and the engineering knowledge and technology required to resolve them Discuss other areas of development including handling and stability, tyre aerodynamics and modelling, aeroacoustics and fluid structure interaction This book focuses on the systematic design of architectures, parameters and control of typical hybrid propulsion systems for wheeled and tracked vehicles based on a combination of theoretical research and engineering practice. Adopting a mechatronic system dynamics perspective, principles and methods from the fields of optimal control and system optimization are applied in order to analyze the hybrid propulsion configuration and controller design. Case investigations for typical hybrid propulsion systems of wheeled and tracked ground vehicles are also provided. Cincinnati Magazine taps into the DNA of the city, exploring shopping, dining, living, and culture and giving readers a ringside seat on the issues shaping the region. Lemon-Aid New and Used Cars and Trucks 1990-2015 steers the confused and anxious buyer through the purchase of new and used vehicles unlike any other car-and-truck book on the market. "Dr. Phil," Canada's best-known automotive expert for more than 42 years, pulls no punches. By analysing the rationales for sustainability strategies, this book addresses a timely question for managers, academics and MBAs: 'when does it pay to be green?' Based on solid theoretical foundations and empirical research, it clarifies the elements involved in the formation and evaluation of sustainability strategies in firms. Steers buyers through the the confusion and anxiety of new and used vehicle purchases like no other car-and-truck book on the market. "Dr. Phil," along with George Iny and the Editors of the Automobile Protection Association, pull no punches. A guide to buying a used car or minivan features information on the strengths and weaknesses of each model, a safety summary, recalls, warranties, and service tips. In its 5th edition International Marketing guides students to understand the importance of international marketing for companies of every size and how going international can enhance value and growth. It provides a solid understanding of the key principles and practices of international marketing. The text has been thoroughly updated to reflect the most recent developments in the current business environment and encourages students to critically engage with the content within the context of modern life. Key Features: - A new chapter dedicated to Digital and Social Media Marketing - Fully updated pedagogy, including 'Going International' vignettes and End of Chapter questions - Brand new examples and case studies from global and innovative companies including Red Bull, Gillette and Audi - Now includes Interactive activities, Testbank questions and Quizzes available on Connect® International Marketing is available with McGraw Hill's Connect®, the online learning platform that features resources to help faculty and institutions improve student outcomes and course delivery efficiency. "International Marketing continues to be an essential subject in any business or management degree. Ghauri and Cateora's book, now in its fifth edition, provides a most up-to-date and authentic evolution of the subject." George S. Yip, Emeritus Professor of Marketing and Strategy, Imperial College Business School. Professor Pervez Ghauri teaches International Business at Birmingham Business School. He is Founding Editor for International Business Review (IBR) and Consulting Editor for Journal of International Business Studies (JIBS). Philip R. Cateora is Professor Emeritus at the University of Colorado. His teaching spanned a range of courses in marketing and international business from fundamentals through to doctoral level. Buying a car is a personal choice that has become a more complex decision because of advances in technology, and reliability issues that are haunting some car makers. Many consumers look to Zack Spencer, the host of Driving Television, for straightforward, no-nonsense, expert advice. In Motormouth, you will find out which vehicles are the safest, most reliable, and best value for your hard-earned dollar. In an easy-to-understand format, you will get: Fuel economy ratings Pros and cons for performance, handling, comfort, and ease-of-use Standard safety features J.D. Power Initial Quality and Dependability scores Base warranty information Engine specifications Pricing for base models Reviews of option packages and trim levels Zack's Top Picks for each category Zack provides insider buying tips to help you, whether you are buying privately, off the internet, or making the rounds to different dealers. He also advises you on your decision to lease, purchase or finance. At your fingertips are strategies and lessons learned from people's adventures in car buying, some with happy endings and others not-so-happy. From a fuel-sipping family friendly hauler to a rubber-burning luxury sports car, you can rely on Motormouth 2011 edition for the information you need to make a wise purchase decision. Go prepared and don't get stuck with a lemon. Take Motormouth along for the ride. The author's grandfathers were both employed by the pre-war motor industry. His singer father, John Hanson, would test John's knowledge of car makes on the long journeys between theatres. He has seen UK car numbers increase tenfold in his lifetime and this is a personal account of his love of classic cars before their success leads to their demise. The motor car took him around Australia; ending up in Darwin 12 months after cyclone Tracy. He explored the wilderness, whilst as a lawyer he represented the Crocodile Dundees of the Northern Territory. He has bought over 70 cars, enjoying their beauty, the aural pleasure of the exhaust note and addictive pleasures of oil and petrol. From Coventry to Darwin and back – an Auto Biography with a difference! The Complete Idiot's Guide to Hybrid and Alternative Fuel Vehicles, by car expert Jack R. Nerad of Kelly's Blue Book, sorts out the dizzying array of choices faced by motorists in America. In clear, jargon-free and non-political language, Nerad explains the nature of each kind of car, their advantages and disadvantages, so that consumers can understand and make a practical choice. Phil Edmonston, Canada's automotive "Dr. Phil," pulls no punches. He says there's never been a better time to buy a new car or truck, thanks to a stronger Canadian dollar and an auto industry offering reduced prices, more cash rebates, low financing rates, bargain leases, and free auto maintenance programs. In this all-new guide he says: Audis are beautiful to behold but hell to own (biodegradable transmissions, "rodent snack" wiring, and mind-boggling depreciation) Many 2011-12 automobiles have "chin-to-chest head restraints, blinding dash reflections, and dash gauges that can't be seen in sunlight, not to mention painful wind-tunnel roar if the rear windows are opened while underway) Ethanol and hybrid fuel-saving claims have more in common with Harry Potter than the Society of Automotive Engineers GM's 2012 Volt electric car is a mixture of hype and hypocrisy from the car company that "killed" its own electric car more than a decade ago You can save \$2,000 by cutting freight fees and "administrative" charges Diesel annual urea fill-up scams can cost you \$300, including an \$80 "handling" charge for \$25 worth of urea Lemon-Aid's 2011-12 Endangered Species List: the Chinese Volvo, the Indian Jaguar and Land Rover, the Mercedes-Benz Smart Car, Mitsubishi, and Suzuki Electric drive vehicles (EDVs) are seen on American roads in increasing numbers. Related to this market trend and critical for it to increase are improvements in battery technology. Battery Technology for Electric Vehicles examines in detail at the research support from the U.S. Department of Energy (DOE) for the development of nickel-metal-hydride (NiMH) and lithium-ion (Li-ion) batteries used in EDVs. With public support comes accountability of the social outcomes associated with public investments. The book overviews DOE investments in advanced battery technology, documents the adoption of these batteries in EDVs on the road, and calculates the economic benefits associated with these improved technologies. It provides a detailed global evaluation of the net social benefits associated with DOE's investments, the results of the benefit-to-cost ratio of over 3.6-to-1, and the life-cycle approach that allows adopted EDVs to remain on the road over their expected future life, thus generating economic and environmental health benefits into the future. Published for more than 50 years, this annual covers the year's main motoring events, from Formula One to the latest styling studies and concept cars, and takes an overview of the period it has chronicled. Famous photographers look back and select their favourite images from more than five decades of racing. The latest developments in the field of hybrid electric vehicles Hybrid Electric Vehicles provides an introduction to hybrid vehicles, which include purely electric, hybrid electric, hybrid hydraulic, fuel cell vehicles, plug-in hybrid electric, and off-road hybrid vehicular systems. It focuses on the power and propulsion systems for these vehicles, including issues related to power and energy management. Other topics covered include hybrid vs. pure electric, HEV system architecture (including plug-in & charging control and hydraulic), off-road and other industrial utility vehicles, safety and EMC, storage technologies, vehicular power and energy management, diagnostics and prognostics, and electromechanical vibration issues. Hybrid Electric Vehicles, Second Edition is a comprehensively updated new edition with four new chapters covering recent advances in hybrid vehicle technology. New areas covered include battery modelling, charger design, and wireless charging. Substantial details have also been included on the architecture of hybrid excavators in the chapter related to special hybrid vehicles. Also included is a chapter providing an overview of hybrid vehicle technology, which offers a perspective on the current debate on sustainability and the environmental impact of hybrid and electric vehicle technology. Completely updated with new chapters Covers recent developments, breakthroughs, and technologies, including new drive topologies Explains HEV fundamentals and applications Offers a holistic perspective on vehicle electrification Hybrid Electric Vehicles: Principles and Applications with Practical Perspectives, Second Edition is a great resource for researchers and practitioners in the automotive industry, as well as for graduate students in automotive engineering. This book steers buyers through the the confusion and anxiety of new and used vehicle purchases unlike any other car-and-truck book on the market. "Dr. Phil," Canada's best-known automotive expert for more than forty-five years, pulls no punches. This book addresses the intersection of entrepreneurship, innovation and sustainability (EIS), presenting high-quality research illuminating the relationship between the three fields. The EIS nexus is particularly relevant from a European point of view given the focus of the European Commission on corporate social responsibility (CSR) and sustainability, as well as their prominent role within the European Union in general. Also, the rapid economic growth witnessed especially in the BRIC countries in recent years requires that firms reconcile sustainability aspects with profitability and innovation, and entrepreneurs are seen as key diffusers of these aims. Sustainability requires both radical and incremental innovation at many different levels (technology,

product, process, system). In many cases, such innovations come from small and medium-sized enterprises and so the role of the entrepreneur is key to their success. The book is split into six sections. The first section examines the nexus in detail focusing on system-oriented connectivity between sustainability, innovation and entrepreneurship. The second section looks at how to nurture corporate entrepreneurship for sustainability; and the third considers "mature" industries such as automotives, chemicals and electronics and how sustainability aspects can be integrated into innovation process and strategy. The fourth section examines the nexus through the lens of developing countries in Africa. Sustainable entrepreneurship is identified as a hugely beneficial way to foster development. The fifth section of the book concentrates on SMEs; and finally the EIS nexus is approached from a network perspective and focuses on inter-organisational partnerships, which are often an important facilitator or spark for EIS initiatives. This book will prove to be essential for researchers in the EIS nexus and be of invaluable help to practitioners, governments and inter-governmental bodies attempting to encourage sustainable entrepreneurship and innovation. Now in its fourth edition, this successful introduction to international marketing has been thoroughly revised, updated and developed throughout to reflect the most recent developments in today's dynamic business environment. Contemporary, engaging and accessible, International Marketing is essential reading for the aspiring practitioner. You will discover:

- The importance of international marketing to creating growth and value
- The management practices of companies, large and small, seeking market opportunities outside their home country
- Why international marketing management strategies should be viewed from a global perspective
- The role of emerging economies in today's business environment
- The impact of increased competition, changing market structures, and differing cultures upon business

**Key Features:**

- An extensive collection of in-depth Case Studies focus upon a diverse range of companies from around the world and are designed to apply understanding and provoke debate.
- 'Going International' vignettes go beyond the theory and demonstrate international marketing in real life with contemporary and engaging examples.
- Further Reading sections have been designed to reflect both the most influential and the most recent studies relating to each chapter acting as a spring board to further study
- Key Terms are highlighted where they first appear and define in the margin for ease of reference to aid understanding. A full Glossary is also provided at the end of the book and online.
- A new chapter in response to reviewer feedback dedicated to International Segmentation and Positioning.

Professor Pervez Ghauri teaches International Marketing and International Business at King's College London. He has been Editor-in-Chief of International Business Review since 1992 and editor (Europe) for the Journal of World Business, since 2008. A couple of years ago, one could probably count the number of electric and plug-in hybrid cars on one hand. Today however, there are numerous models available from almost every manufacturer - in an array of shapes, styles, price points, and powers to meet the wide range of consumer needs. Electric Vehicles are here to stay. Manufacturers like Nissan and Toyota firmly believe that there is a prominent future in electric cars, and have invested heavily in development of these models. Essentially there are two kinds of electric cars, one which are purely electric and the other hybrid cars. The hybrid cars couples the standard gasoline motor to a small battery pack to increase the overall mileage of the cars. What You'll Get Inside:

1. 2015 Chevrolet Spark EV
2. Chevrolet Volt / Holden Volt / Vauxhall Ampera
3. BMW i3
4. BMW i8
5. McLaren P1
6. Ferrari LaFerrari
7. 2014 Mahindra Reva E2o
8. 2015 Hyundai Sonata Hybrid
9. 2014 Mitsubishi i-MiEV
10. 2014 BMW ActiveHybrid 3
11. 2014 BMW ActiveHybrid 5
12. Porsche 918
13. 2015 Toyota Prius
14. Tesla Model S
15. 2015 BYD e6
16. Mercedes Benz B class Electric
17. 2015 Volkswagen e-Golf
18. 2015 Volkswagen e-up!
19. Smart For two Electric Drive
20. 2015 Fiat 500 e
22. 2015 Ford Focus Electric
23. 2014 Honda Accord PHEV
24. Mitsubishi Outlander PHEV
25. 2015 Kia Soul EV
26. 2014 Citroen c-zero
27. 2015 Morgan e plus
28. 2014 Fluence ZE
29. 2014 Nissan Leaf
30. 2014 Think City
31. 2014 Myers NmG
32. 2014Tango T600
33. The eBox
34. 2015 Toyota Highlander
35. 2014 Volkswagen Jetta Hybrid
36. 2015 Lexus CT 200h
37. 2014 Renault Twizy
38. 2014 Porsche Panamera S E-Hybrid
39. 2014 Renault Zoe
40. 2014 Toyota RAV4 EV
41. 2014 Wheego LiFE
42. Volkswagen XL1
43. 2015 Ford C-Max Hybrid
44. 2014 Honda Civic Hybrid
45. 2014 Ford Fusion Hybrid
46. 2014 Lexus ES 300h
47. 2014 Toyota Avalon Hybrid
48. 2014 Lexus RX 450h
49. 2014 Cadillac ELR
50. 2014 Toyota Camry Hybrid

With Technical Data. Take a Sneak Peak Inside (page 36): "36. 2015 Lexus CT 200h The 2015 Lexus CT 200h happens to be the only small luxury hatchback in the market that's also a hybrid, and it's significantly more fun than you would expect. The 2015 Lexus CT 200h is both the most inexpensive and the smallest model in the line-up of Lexus brand. This puts it in a group of one. Unlike most Lexus though, the CT does not come with a long list of standard and available features--and the pampering of a much more bespoke and observant dealership experience. Powertrain Front Wheel Drive Propulsion Electric / IC Engine Horsepower 136hp combined Electric / IC Engine Torque 105 lb-ft Price Starting from US \$32,050-60 MPH 10.3 Sec Mileage 43 mpg City/40 mpg Hwy Range 500 miles Co2 emission 136 g/km "Buy Now & See What Model Fits You. When Lexus launched fifteen years ago, the idea of a Japanese brand that would compete fender to fender with Mercedes-Benz, BMW, and Cadillac seemed preposterous. But Lexus' first sedan shocked the world. The result of hundreds of prototypes, the work of more than 1,000 engineers, and some \$1 billion, the Lexus LS 400 pioneered new ground. Within just a few years, Lexus had transformed itself from an unlikely outsider into one of the industry's leaders as it redefined the idea of the luxury vehicle while also building a dealer network that gave unprecedented attention to service. The Lexus Story describes the brand's rapid ascent-and its travails along the way. The Lexus Story is the first journalistic telling of the history of this extraordinary company. And it is the only account afforded full access to the designers, engineers, dealers, and company leaders who molded the cars and the brand. The Lexus Story takes readers deep inside the making of first-class automobiles, from the creative sparks kindled in Lexus' far-flung design studios to the engineering refinements that translate ideals of performance and luxury into steel, glass, and rubber. Designed to be both readable and visually welcoming with more than 200 full-color photographs, The Lexus Story is a compelling history of a world-class brand. The why, what and how of the electric vehicle powertrain Empowers engineering professionals and students with the knowledge and skills required to engineer electric vehicle powertrain architectures, energy storage systems, power electronics converters and electric drives. The modern electric powertrain is relatively new for the automotive industry, and engineers are challenged with designing affordable, efficient and high-performance electric powertrains as the industry undergoes a technological evolution. Co-authored by two electric vehicle (EV) engineers with decades of experience designing and putting into production all of the powertrain technologies presented, this book provides readers with the hands-on knowledge, skills and expertise they need to rise to that challenge. This four-part practical guide provides a comprehensive review of battery, hybrid and fuel cell EV systems and the associated energy sources, power electronics, machines, and drives. The first part of the book begins with a historical overview of electromobility and the related environmental impacts motivating the development of the electric powertrain. Vehicular requirements for electromechanical propulsion are then presented. Battery electric vehicles (BEV), fuel cell electric vehicles (FCEV), and conventional and hybrid electric vehicles (HEV) are then described, contrasted and compared for vehicle propulsion. The second part of the book features in-depth analysis of the electric powertrain traction machines, with a particular focus on the induction machine and the surface- and interior-permanent magnet ac machines. The brushed dc machine is also considered due to its ease of operation and understanding, and its historical place, especially as the traction machine on NASA's Mars rovers. The third part of the book features the theory and applications for the propulsion, charging, accessory, and auxiliary power electronics converters. Chapters are presented on isolated and non-isolated dc-dc converters, traction inverters, and battery charging. The fourth part presents the introductory and applied electromagnetism required as a foundation throughout the book.

- Introduces and holistically integrates the key EV powertrain technologies.
- Provides a comprehensive overview of existing and emerging automotive solutions.
- Provides experience-based expertise for vehicular and powertrain system and sub-system level study, design, and optimization.
- Presents many examples of powertrain technologies from leading manufacturers.
- Discusses the dc traction machines of the Mars rovers, the ultimate EVs from NASA.
- Investigates the environmental motivating factors and impacts of electromobility.
- Presents a structured university teaching stream from introductory undergraduate to postgraduate.
- Includes real-world problems and assignments of use to design engineers, researchers, and students alike.
- Features a companion website with numerous references, problems, solutions, and practical assignments.
- Includes introductory material throughout the book for the general scientific reader.
- Contains essential reading for government regulators and policy makers.

**Electric Powertrain: Energy Systems, Power Electronics and Drives for Hybrid, Electric and Fuel Cell Vehicles** is an important professional resource for practitioners and researchers in the battery, hybrid, and fuel cell EV transportation industry. The book is a structured holistic textbook for the teaching of the fundamental theories and applications of energy sources, power electronics, and electric machines and drives to engineering undergraduate and postgraduate students.

**Textbook Structure and Suggested Teaching Curriculum** This is primarily an engineering textbook covering the automotive powertrain, energy storage and energy conversion, power electronics, and electrical machines. A significant additional focus is placed on the engineering design, the energy for transportation, and the related environmental impacts. This textbook is an educational tool for practicing engineers and others, such as transportation policy planners and regulators. The modern automobile is used as the vehicle upon which to base the theory and applications, which makes the book a useful educational reference for our industry colleagues, from chemists to engineers. This material is also written to be of interest to the general reader, who may have little or no interest in the power electronics and machines. Introductory science, mathematics, and an inquiring mind suffice for some chapters. The general reader can read the introduction to each of the chapters and move to the next as soon as the material gets too advanced for him or her. Part I Vehicles and Energy Sources Chapter 1 Electromobility and the Environment Chapter 2 Vehicle

Dynamics Chapter 3 Batteries Chapter 4 Fuel Cells Chapter 5 Conventional and Hybrid Powertrains Part II Electrical Machines Chapter 6 Introduction to Traction Machines Chapter 7 The Brushed DC Machine Chapter 8 Induction Machines Chapter 9 Surface-permanent-magnet AC Machines Chapter 10: Interior-permanent-magnet AC Machines Part III Power Electronics Chapter 11 DC-DC Converters Chapter 12 Isolated DC-DC Converters Chapter 13 Traction Drives and Three-phase Inverters Chapter 14 Battery Charging Chapter 15 Control of the Electric Drive Part IV Basics Chapter 16 Introduction to Electromagnetism, Ferromagnetism, and Electromechanical Energy Conversion

The first third of the book (Chapters 1 to 6), plus parts of Chapters 14 and 16, can be taught to the general science or engineering student in the second or third year. It covers the introductory automotive material using basic concepts from mechanical, electrical, environmental, and electrochemical engineering. Chapter 14 on electrical charging and Chapter 16 on electromagnetism can also be used as a general introduction to electrical engineering. The basics of electromagnetism, ferromagnetism and electromechanical energy conversion (Chapter 16) and dc machines (Chapter 7) can be taught to second year (sophomore) engineering students who have completed introductory electrical circuits and physics. The third year (junior) students typically have covered ac circuit analysis, and so they can cover ac machines, such as the induction machine (Chapter 8) and the surface permanent-magnet ac machine (Chapter 9). As the students typically have studied control theory, they can investigate the control of the speed and torque loops of the motor drive (Chapter 15). Power electronics, featuring non-isolated buck and boost converters (Chapter 11), can also be introduced in the third year. The final-year (senior) students can then go on to cover the more advanced technologies of the interior-permanent-magnet ac machine (Chapter 10). Isolated power converters (Chapter 12), such as the full-bridge and resonant converters, inverters (Chapter 13), and power-factor-corrected battery chargers (Chapter 14), are covered in the power electronics section. This material can also be covered at the introductory postgraduate level. Various homework, simulation, and research exercises are presented throughout the textbook. The reader is encouraged to attempt these exercises as part of the learning experience. Instructors are encouraged to contact the author, John Hayes, direct to discuss course content or structure. One hundred years ago electric cars were the most popular automobiles in the world. In the late nineteenth century and at the start of the twentieth century, they outsold every other type of car. And yet, within a couple of decades of the start of the twentieth century, the electric car had vanished. Thousands of battery-powered cars disappeared from the streets, replaced by the internal combustion engine, and their place in the history of the automobile was quietly erased. A century later, electric cars are making a comeback. Fears over pollution and global warming have forced manufacturers to reconsider the electric concept. A History of Electric Cars presents for the first time the full story of electric cars and their hybrid cousins. It examines how and why electric cars failed the first time - and why today's car manufacturers must learn the lessons of the past if they are to avoid repeating previous mistakes all over again. The book examines in detail: Early vehicles such as the Lohner-Porsche petrol-electric hybrid of 1901; Key figures in the history of the electric car development such as Henry Ford; Sir Clive Sinclair's plans to build a number of electric vehicles, designed to sit alongside the Sinclair C5; The return of the electric technology to vehicles as diverse as the NASA Lunar Rover, commuting vehicles and supercars; Future developments in electric cars. For the first time the full story of electric cars and their hybrids are examined. The hidden past of the electric automobile is uncovered and its future developments are discussed. Superbly illustrated with 300 colour photographs, many of which are rare and original sketch designs. Nigel Burton has written and lectured on cars and automotive history for more than twenty years. Canada's automotive "Dr. Phil" says there's never been a better time to buy a new car or truck, thanks to a stronger Canadian dollar, a worldwide recession driving prices downward, and a more competitive Japanese auto industry that's still reeling from a series of natural disasters. The Encyclopedia of Electrochemical Power Sources is a truly interdisciplinary reference for those working with batteries, fuel cells, electrolyzers, supercapacitors, and photo-electrochemical cells. With a focus on the environmental and economic impact of electrochemical power sources, this five-volume work consolidates coverage of the field and serves as an entry point to the literature for professionals and students alike. Covers the main types of power sources, including their operating principles, systems, materials, and applications Serves as a primary source of information for electrochemists, materials scientists, energy technologists, and engineers Incorporates nearly 350 articles, with timely coverage of such topics as environmental and sustainability considerations Medium- and heavy-duty trucks, motor coaches, and transit buses - collectively, "medium- and heavy-duty vehicles", or MHDVs - are used in every sector of the economy. The fuel consumption and greenhouse gas emissions of MHDVs have become a focus of legislative and regulatory action in the past few years. This study is a follow-on to the National Research Council's 2010 report, Technologies and Approaches to Reducing the Fuel Consumption of Medium-and Heavy-Duty Vehicles. That report provided a series of findings and recommendations on the development of regulations for reducing fuel consumption of MHDVs. On September 15, 2011, NHTSA and EPA finalized joint Phase I rules to establish a comprehensive Heavy-Duty National Program to reduce greenhouse gas emissions and fuel consumption for on-road medium- and heavy-duty vehicles. As NHTSA and EPA began working on a second round of standards, the National Academies issued another report, Reducing the Fuel Consumption and Greenhouse Gas Emissions of Medium- and Heavy-Duty Vehicles, Phase Two: First Report, providing recommendations for the Phase II standards. This third and final report focuses on a possible third phase of regulations to be promulgated by these agencies in the next decade. The most trustworthy source of information available today on savings and investments, taxes, money management, home ownership and many other personal finance topics. Complete step-by-step repair and maintenance information, 700+ photos, and wiring diagrams all based on a full disassembly and reassembly of the vehicle. Thinking about a knockout audio system for your car? Not sure what you need, want, or can afford? Car Audio For Dummies is a great place to find some answers! But wait — what if speakers that vibrate your floorboards don't turn you on? What if you're thinking more about hands-free phone access and a DVD player to entertain the kids? Surprise! Car Audio For Dummies can give you a hand there, too. Whether you want to feel as if your favorite band is performing right on top of your dashboard or you want to keep the soccer team entertained on the way to the tournament, this friendly guide can help. From planning your system and buying components to getting them installed and protecting your investment, you'll find plenty of wise advice. Get the scoop on: Figuring out what kind of equipment you need to do what you want Identifying good sound quality when you hear it Adding components to a factory system Choosing a video player, hands-free phone system, amplifiers, speakers, and more Finding a reliable installer (today's automotive electronics systems are so complex that you probably won't want to go it alone) Understanding warranties and returns Protecting and insuring your system Car Audio For Dummies is sort of like that knowledgeable friend you want to take along when you tackle a project like this. Sounds like a good idea, doesn't it?

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