Automotive Handbook Sae International

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Project Management for Automotive Engineers - Jon Quigley 2016
Project Management for Automotive Engineers: A Field Guide was developed to help automotive engineers be better project managers as automotive projects involve suppliers dispersed across the globe, and can often span multiple years. Project scope change is common, and so too are the budget constraints and tight deadlines. This book is an excellent guide on how to manage continuous change. As project management in this particular industry is intrinsically linked to product development, the chapters focus on the project management aspects that are significant during the various stages of a produc.

Automotive Engineering Fundamentals - 19??

Automotive Safety Handbook - Ulrich Seiffert 2003
Examines the state-of-the-art in passenger car vehicle safety. Looks at both active and passive safety systems. Describes basic relationships and new developments related to accident avoidance (including man/machine interface) and mitigation of injuries. In addition to detail on accident avoidance, occupant protection and biomechanics, the book features thorough discussion of the interrelationships among the occupant, the vehicle and the restraint system (in frontal, lateral, rear impacts and rollover). Other subjects covered include safety legislation, vehicle body and interior design, accident simulation tests, pedestrian protection and compatibility.

Dictionary of Automotive Engineering - Don Goodsell 2016-06-27
Dictionary of Automotive Engineering provides a definition of terms used in automotive engineering. The coverage of the dictionary includes words, terms, and slangs that have an automotive connotation. The book also provides illustrations to help clarify some meaning. The text will be of great use to both novice and experienced automotive engineers.

Race Car Vehicle Dynamics Set - William F. Milliken 1997-11
This set includes Race Car Vehicle Dynamics, and Race Car Vehicle Dynamics - Problems, Answers and Experiments. Written for the engineer as well as the race car enthusiast, Race Car Vehicle Dynamics includes much information that is not available in any other vehicle dynamics text. Truly comprehensive in its coverage of the fundamental concepts of vehicle dynamics and their application in a racing environment, this book has become the definitive reference on this topic. Although the primary focus is on the race car, the engineering fundamentals detailed are also applicable to passenger car design and engineering. Authors Bill and Doug Milliken have developed many of the original vehicle dynamics theories and principles covered in this book, including the Moment Method, "g-g" Diagram, pair analysis, lap time

simulation, and tyre data normalization. The book also includes contributions from other experts in the field. Chapters cover: *The Problem Imposed by Racing *Tire Behavior *Aerodynamic Fundamentals *Vehicle Axis Systems and more. Written for the engineer as well as the race car enthusiast and students, the companion workbook to the original classic book, Race Car Vehicle Dynamics, includes: *Detailed worked solutions to all of the problems *Problems for every chapter in Race Car Vehicle Dynamics, including many new problems *The Race Car Vehicle Dynamics Program Suite (for Windows) with accompanying exercises *Experiments to try with your own vehicle *Educational appendix with additional references and course outlines *Over 90 figures and graphs This workbook is widely used as a college textbook and has been an SAE International best seller since it's introduction in 1995.
Introduction to Engine Valvetrains - Yushu Wang 2006-10-27

Alternative Fuels Guidebook - Richard L. Bechtold 1997
This book presents the fundamentals needed to understand the physical and chemical properties of alternative fuels, and how they impact refueling system design and the modification of existing garages for safety. It covers a wide range of fuels including alcohols, gases, and vegetable oils. Chapters cover: Alternative Fuels and Their Origins Properties and Specifications Materials Compatibility Storage and Dispensing Refueling Facility Installation and Garage Facility Modifications and more
Internal Combustion Engine Fundamentals - John B. Heywood 1988
This text, by a leading authority in the field, presents a fundamental and factual development of the science and engineering underlying the design of combustion engines and turbines. An extensive illustration program supports the concepts and theories discussed.
Ergonomics in the Automotive Design Process - Vivek D. Bhise 2016-04-19
The auto industry is facing tough competition and severe economic constraints. Their products need to be designed "right the first time" with the right combinations of features that not only satisfy the customers but continually please and delight them by providing increased functionality, comfort, convenience, safety, and craftsmanship. Based on t
S. A. E. Handbook - Society of automotive engineers (Etats-Unis). 1936

Automotive Handbook - Robert Bosch 1996
A pocket-sized technical reference designed to provide reliable data, at a practical level, for automotive engineers and mechanics.
Handbook of Bioplastics and Biocomposites Engineering Applications - Srikanth Pilla 2011-09-15
In today’s world, bioplastics are becoming increasinglyprominent owing mainly to scarcity of oil, increase in the cost ofpetroleum-based commodities, and growing environmental concernswith the dumping of non-biodegradable plastics in landfills. Thisbook summarizes the field of bioplastics by illustrating how theyform a unique class of research area that integrates pure andapplied sciences such as chemistry, engineering and materialsscience, to initate solutions. Compelling science demystics thiscomplex and often ambiguous branch of study for benefit of allthose concerned with bioplastics.
Bosch Automotive Electrics and Automotive Electronics - Robert Bosch GmbH 2013-09-24
This is a complete reference guide to automotive electrics and electronics. This new edition of the definitive reference for automotive engineers, compiled by one of the world's largest automotive equipment suppliers, includes new and updated material. As in previous editions different topics are covered in a concise but descriptive way backed up by diagrams, graphs, photographs and tables enabling the reader to better comprehend the subject. This fifth edition revises the classical topics of the vehicle electrical systems such as system architecture, control, components and sensors. There is now greater detail on electronics and their application in the motor vehicle, including electrical energy management (EEM) and discusses the topic of inter system networking within the vehicle. It also includes a description of the concept of hybrid drive a topic that is particularly current due to its

ability to reduce fuel consumption and therefore CO2 emissions.This book will benefit automotive engineers and design engineers, automotive technicians in training and mechanics and technicians in garages. It may also be of interest to teachers/ lecturers and students at vocational colleges, and enthusiasts.

Vehicle Crash Mechanics - Matthew Huang 2002-06-19

Governed by strict regulations and the intricate balance of complex interactions among variables, the application of mechanics to vehicle crashworthiness is not a simple task. It demands a solid understanding of the fundamentals, careful analysis, and practical knowledge of the tools and techniques of that analysis. Vehicle Crash Mechanics sets forth the basic principles of engineering mechanics and applies them to the issue of crashworthiness. The author studies the three primary elements of crashworthiness: vehicle, occupant, and restraint. He illustrates their dynamic interactions through analytical models, experimental methods, and test data from actual crash tests. Parallel development of the analysis of actual test results and the interpretation of mathematical models related to the test provides insight into the parameters and interactions that influence the results. Detailed case studies present real-world crash tests, accidents, and the effectiveness of air bag and crash sensing systems. Design analysis formulas and two- and three-dimensional charts help in visualizing the complex interactions of the design variables. Vehicle crashworthiness is a complex, multifaceted area of study. Vehicle Crash Mechanics clarifies its complexities. The book builds a solid foundation and presents up-to-date techniques needed to meet the ultimate goal of crashworthiness analysis and experimentation: to satisfy and perhaps exceed the safety requirements mandated by law.

Fundamentals of Vehicle Dynamics - Thomas D. Gillespie 1992

This book provides comprehensive coverage of vehicle dynamics presenting a foundation of engineering principles and analytical methods to explain the performance of an automotive vehicle. Includes details on the basic mechanics governing vehicle performance and familiarizes the reader with analytical methods and terminology.

Automotive Embedded Systems Handbook - Nicolas Navet 2017-12-19

A Clear Outline of Current Methods for Designing and Implementing Automotive Systems Highlighting requirements, technologies, and business models, the Automotive Embedded Systems Handbook provides a comprehensive overview of existing and future automotive electronic systems. It presents state-of-the-art methodological and technical solutions in the areas of in-vehicle architectures, multipartner development processes, software engineering methods, embedded communications, and safety and dependability assessment. Divided into four parts, the book begins with an introduction to the design constraints of automotive-embedded systems. It also examines AUTOSAR as the emerging de facto standard and looks at how key technologies, such as sensors and wireless networks, will facilitate the conception of partially and fully autonomous vehicles. The next section focuses on networks and protocols, including CAN, LIN, FlexRay, and TTCAN. The third part explores the design processes of electronic embedded systems, along with new design methodologies, such as the virtual platform. The final section presents validation and verification techniques relating to safety issues. Providing domain-specific solutions to various technical challenges, this handbook serves as a reliable, complete, and well-documented source of information on automotive embedded systems.

The Car Hacker's Handbook - Craig Smith 2016-03-01

Modern cars are more computerized than ever. Infotainment and navigation systems, Wi-Fi, automatic software updates, and other innovations aim to make driving more convenient. But vehicle technologies haven’t kept pace with today’s more hostile security environment, leaving millions vulnerable to attack. The Car Hacker’s Handbook will give you a deeper understanding of the computer systems and embedded software in modern vehicles. It begins by examining vulnerabilities and providing detailed explanations of communications over the CAN bus and between devices and systems. Then, once you have an understanding of a vehicle’s communication network, you’ll learn how to intercept data and perform specific hacks to track vehicles, unlock doors, glitch engines, flood communication, and more. With a

focus on low-cost, open source hacking tools such as Metasploit, Wireshark, Kayak, can-utils, and ChipWhisperer, The Car Hacker's Handbook will show you how to: –Build an accurate threat model for your vehicle –Reverse engineer the CAN bus to fake engine signals –Exploit vulnerabilities in diagnostic and data-logging systems –Hack the ECU and other firmware and embedded systems –Feed exploits through infotainment and vehicle-to-vehicle communication systems –Override factory settings with performance-tuning techniques –Build physical and virtual test benches to try out exploits safely If you're curious about automotive security and have the urge to hack a two-ton computer, make The Car Hacker's Handbook your first stop.

The Evolution of Automotive Technology - Gijs Mom 2014-11-24

This book covers one and a quarter century of the automobile, conceived as a cultural history of its technology, aimed at engineering students and all those who wish to have a concise introduction into the basics of automotive technology and its long-term development . Its approach is systemic and includes the behavior of drivers, producers, nonusers, victims, and other "stakeholders" as well as the discourse around mobility. Nowadays, students of innovation prefer the term co-evolution, emphasizing the parallel and mutually dependent development of technology and society. This acknowledges the importance of contingency and of the impact of the past upon the present, the very reason why The Evolution of Automotive Technology: A Handbook looks at car technology from a long-term perspective. Often we will conclude that the innovation was in the (re)arrangement of existing technologies. Since its beginnings, car manufacturers have brought a total of 1 billion automobiles to the market. We are currently witnessing an explosion toward the second billion. Looking back, we can see this history evolve through five distinctive phases: • Emergence (1880–1917) • Persistence (1917–1940) • Exuberance (1945–1973) • Doom (1973–2000) • Confusion (2001–present) The Evolution of Automotive Technology: A Handbook helps us understand how these phases impacted society and, in turn, shows us how car technology was influenced by car users themselves.

Handbook of Automotive Design Analysis - John Fenton 2013-10-22

Handbook of Automotive Design Analysis examines promising approaches to automotive design analysis. The discussions are organized based on the major "technological divisions of motor vehicles: the transmission gearbox and drive line; steering and suspension; and the automobile structure. This handbook is comprised of three chapters; the first of which deals with transmission gearboxes and drive lines. This chapter describes manual-shift gearbox design, synchromesh mechanisms, hydrokinetic automatic gearboxes, drive-line main assemblies, and drive-line losses. The next chapter is about vehicle suspensions and optimum handling performance, with emphasis on two categories of handling of vehicles: steady-state turning (or cornering) and the transient state. The behavior of the steering system, ride parameters, and the design and installation of spring elements are discussed. The third and final chapter focuses on the application of structural design analysis to the automotive structure. After explaining the fundamentals of structural theory in car body design, this book presents the analysis of commercial vehicle body and chassis. Throughout the book, maximum use is made of line-drawings and concise textural presentation to provide the working designer with an easy assimilable account of automotive design analysis. This book will be useful to young automotive engineers and newcomers in automotive design.

Integrated Automotive Safety Handbook - Mark Gonter 2013-10-08

Even though a number of developed countries enjoy a high level of vehicle safety, more than 1.2 million fatalities still occur each year on roadways worldwide. There remains a need to continue improving vehicle and road safety. New technologies in sensors and electronic control units, and the growing knowledge of car-to-car and car-to-infrastructure technologies have led to a fusion of the previously separated areas of accident avoidance (popularly known as active safety) and mitigation of injuries (popularly known as passive safety) into the newer concept of integrated vehicle safety. This new approach represents a further step toward lowering accident rates. This book, written by two of the foremost automotive engineering safety experts,

takes a unique and comprehensive approach to describing all areas of vehicle safety: accident avoidance, pre-crash, mitigation of injuries, and post-crash technologies, providing a solutions-based perspective of integrated vehicle safety. Also covered are accident investigation and worldwide legislation as they apply to integrated vehicle safety. The man-machine interface, biomechanics and development and simulation techniques are also key concepts that are thoroughly described. Special attention is given to driver assistance systems and to compatibility in car-to-car crashes and pedestrian protection. Chapters cover: accident research, functions of integrated safety, biomechanics and protection criteria, injury mitigation, adaptive occupant protection, compatibility, calculation and simulation, and the future. The book is useful for those interested in any aspect of automotive safety. Engineers and scientists from the automotive industry can learn new details as well as the broad perspective of vehicle safety today. The book also provides key information to traffic safety professionals, law enforcement, insurance practitioners, and journalists. Those who help shape traffic and vehicle legislation can gain a wider understanding of the topic to help them craft better laws. The book also serves as a valuable learning resource for academicians and students.

S.A.E. Handbook - 1978

Automotive Control Systems - Uwe Kiencke 2005-04-13

Written by two of the most respected, experienced and well-known researchers and developers in the field (e.g., Kiencke worked at Bosch where he helped develop anti-breaking system and engine control; Nielsen has lead joint research projects with Scania AB, Mecel AB, Saab Automobile AB, Volvo AB, Fiat GM Powertrain AB, and DaimlerChrysler. Reflecting the trend to optimization through integrative approaches for engine, driveline and vehicle control, this valuable book enables control engineers to understand engine and vehicle models necessary for controller design and also introduces mechanical engineers to vehicle-specific signal processing and automatic control. Emphasis on measurement, comparisons between performance and modelling, and realistic examples derive from the authors' unique industrial experience . The second edition offers new or expanded topics such as diesel-engine modelling, diagnosis and anti-jerking control, and vehicle modelling and parameter estimation. With only a few exceptions, the approaches

Steering Handbook - Manfred Harrer 2016-06-24

This edited volume presents basic principles as well as advanced concepts of the computational modeling of steering systems. Moreover, the book includes the components and functionalities of modern steering system, which are presented comprehensively and in a practical way. The book is written by more than 15 leading experts from the automotive industry and its components suppliers. The target audience primarily comprises practicing engineers, developers, researchers as well as graduate students who want to specialize in this field.

SAE Handbook - SAE International 2004

Throughout the world, thousands of professionals like you rely on SAE ground vehicle standards for technical guidance, design, and procurement. Revised annually by engineering experts who serve on SAE Technical Committees, the SAE Handbook includes the most current J-Reports, Recommended Practices, and Information Reports. Updated and expanded to include the latest industry standards, the new 2004 SAE Handbook features all the benefits youAve come to expect from this essential, trusted resource. No matter what your specialty, the SAE Handbook has you covered: Passenger Cars; Construction Equipment; Trucks; Motorcycles; Buses; Trailers; Brakes; Agricultural Tractors; Electrical and Electronic; Parts and Components; Equipment; Restraint Systems; Emissions; Seat Belts; Fuels and Lubricants; Tires; Lighting; Transmissions; Materials; Wheels; Noise and Vibration; and More The J1939 family of standards and J2008 are not included in the 2004 SAE Handbook

Automotive Transmissions - Yong Chen 2020-07-30

This book introduces readers to the theory, design and applications of automotive transmissions. It covers multiple categories, e.g. AT, AMT, CVT, DCT and transmissions for electric vehicles, each of which has its own configuration and characteristics. In turn, the book addresses the

effective design of transmission gear ratios, structures and control strategies, and other topics that will be of particular interest to graduate students, researchers and engineers. Moreover, it includes real-world solutions, simulation methods and testing procedures. Based on the author’s extensive first-hand experience in the field, the book allows readers to gain a deeper understanding of vehicle transmissions.

The Shock Absorber Handbook - John C. Dixon 2008-02-28

Every one of the many millions of cars manufactured annually worldwide uses shock absorbers, otherwise known as dampers. These form a vital part of the suspension system of any vehicle, essential for optimizing road holding, performance and safety. This, the second edition of the Shock Absorber Handbook (first edition published in 1999), remains the only English language book devoted to the subject. Comprehensive coverage of design, testing, installation and use of the damper has led to the book's acceptance as the authoritative text on the automotive applications of shock absorbers. In this second edition, the author presents a thorough revision of his book to bring it completely up to date. There are numerous detail improvements, and extensive new material has been added particularly on the many varieties of valve design in the conventional hydraulic damper, and on modern developments such as electrorheological and magnetorheological dampers. "The Shock Absorber Handbook, 2nd Edition" provides a thorough treatment of the issues surrounding the design and selection of shock absorbers. It is an invaluable handbook for those working in industry, as well as a principal reference text for students of mechanical and automotive engineering.

Automotive Handbook - Konrad Reif 2018

Brake Technology Handbook - Bert Breuer 2008

Microelectronics and mechatronics have resulted in a significant increase in the technical potential and functionality of brake systems. In a single source, this book provides comprehensive coverage of the current state of the art, as well as the future, of brakes and braking systems. Translated and completely updated from the landmark German-language work Bremsenhandbuch, Brake Technology Handbook covers brake system fundamentals, requirements, design, construction, components, and subsystem functions for vehicles of all types (including passenger cars, commercial vehicles, off-road vehicles, motorcycles, racing vehicles and even aircraft).

Multiaxial Fatigue - Darrell Socie 2000

1D and Multi-D Modeling Techniques for IC Engine Simulation - Angelo Onorati 2020-04-06

1D and Multi-D Modeling Techniques for IC Engine Simulation provides a description of the most significant and recent achievements in the field of 1D engine simulation models and coupled 1D-3D modeling techniques, including 0D combustion models, quasi-3D methods and some 3D model applications.

Vehicle Noise, Vibration, and Sound Quality - Gang Sheng Chen 2012-04-04

This book gives readers a working knowledge of vehicle vibration, noise, and sound quality. The knowledge it imparts can be applied to analyze real-world problems and devise solutions that reduce vibration, control noise, and improve sound quality in all vehicles—ground, aerospace, rail, and marine. Also described and illustrated are fundamental principles, analytical formulations, design approaches, and testing techniques. Whole vehicle systems are discussed, as are individual components. The latest measurement and computation tools are presented to help readers with vehicle noise, vibration, and sound quality issues. The book opens with a presentation of the fundamentals of vibrations and basic acoustic concepts, as well as how to analyze, test, and control noise and vibrations. The next 2 chapters delve into noise and vibrations that emanate from powertrains, bodies, and chassis. The book finishes with an in-depth discussion on evaluating noise, vibration, and sound quality, giving readers a solid grounding in the fundamentals of the subject, as well as information they can apply to situations in their day-to-day work. This book is intended for: •Upper-level undergraduate and graduate students of vehicle engineering •Practicing engineers •Designers •Researchers •Educators

Automotive Fuels Reference Book - Paul Richards 2014-03-05
The first two editions of this title, published by SAE International in 1990 and 1995, have been best-selling definitive references for those needing technical information about automotive fuels. This long-awaited new edition has been thoroughly revised and updated, yet retains the original fundamental fuels information that readers find so useful. This book is written for those with an interest in or a need to understand automotive fuels. Because automotive fuels can no longer be developed in isolation from the engines that will convert the fuel into the power necessary to drive our automobiles, knowledge of automotive fuels will also be essential to those working with automotive engines. Small quantities of fuel additives increasingly play an important role in bridging the gap that often exists between fuel that can easily be produced and fuel that is needed by the ever-more sophisticated automotive engine. This book pulls together in a single, extensively referenced volume, the three different but related topics of automotive fuels, fuel additives, and engines, and shows how all three areas work together. It includes a brief history of automotive fuels development, followed by chapters on automotive fuels manufacture from crude oil and other fossil sources. One chapter is dedicated to the manufacture of automotive fuels and fuel blending components from renewable sources. The safe handling, transport, and storage of fuels, from all sources, are covered. New combustion systems to achieve reduced emissions and increased efficiency are discussed, and the way in which the fuels' physical and chemical characteristics affect these combustion processes and the emissions produced are included. There is also discussion on engine fuel system development and how these different systems affect the corresponding fuel requirements. Because the book is for a global market, fuel system technologies that only exist in the legacy fleet in some markets are included. The way in which fuel requirements are developed and specified is discussed. This covers test methods from simple laboratory bench tests, through engine testing, and long-term test procedures.
Coating Technology for Vehicle Applications - Sung Chul Cha 2015-04-20
This book describes current, competitive coating technologies for vehicles. The authors detail how these technologies impact energy efficiency in engines and with increased use of lightweight materials and by varying coatings applications can resolve wear problems, resulting in the increased lifecycle of dies and other vehicle components.
Manufacturing System and Process Development for Vehicle Assembly - He Tang 2017-12-20
The evolution and execution of automotive manufacturing are explored in this fundamental manual. It is an excellent reference for entry level manufacturing engineers and also serves as a training guide for nonmanufacturing professionals. The book covers the major areas of vehicle assembly manufacturing and addresses common approaches and procedures of the development process. Having held positions as both a University Professor and as a Lead Engineering Specialist in industry, the author draws on his experience in both theory and application to fill the gap between academic research and industrial practices. This concisely written, comprehensive review discusses the sophisticated principles and concepts of automotive manufacturing from development to applications and includes: 250 illustrations and 90 tables. End-of-chapter review questions. Research topics for in-depth case studies, literature reviews, and/or course projects. Analytical problems for additional practice. Directly extracted and summarized from automotive manufacturing practices, this book serves as an essential manual. The subject is complemented by the author's first book, Automotive Vehicle Assembly Processes and Operations Management, which provides even greater depth to the complex endeavor of modern automotive manufacturing.
The Evolution of Automotive Technology - Gijs Mom 2014
This book covers one and a quarter century of the automobile, conceived as a cultural history of its technology, aimed at engineering students and all those who wish to have a concise introduction into the basics of automotive technology and its long-term development . Its approach is systemic and includes the behavior of drivers, producers, nonusers, victims, and other ""stakeholders"" as well as the discourse around

mobility. Nowadays, students of innovation prefer the term co-evolution, emphasizing the parallel and mutually dependent development of technology and society. This acknowledges t.

Handbook of Automotive Engineering - H.-H. Braess (ed) 2005

This latest edition and successor to the well-known German language handbook last published by Professors Heinrich Buschmann and Paul Koessler is widely considered to be one of the most comprehensive encyclopedias of vehicle systems and design. Featuring more extensive coverage than other comparable publications, it contains: information on automotive design and applications, Over 40 subject matter experts focusing on specific automotive topics , Information on powertrains, electronics, vehicle safety and future materials, Extensive figures, drawings, illustrations and formulas.

SAE Fatigue Design Handbook - Society of Automotive Engineers. Fatigue Design and Evaluation Committee 1997

Covers, in a single source, current technologies and procedures on all of the major elements of fatigue design. Intended as a handbook for industrial use, this book describes the major elements of the fatigue design process and how those elements must be tied together in a comprehensive product evaluation. Using this handbook will save the design engineer time, while ensuring understanding of the important elements of the fatigue design process.

Handbook of Driver Assistance Systems - Hermann Winner 2015-10-15

This fundamental work explains in detail systems for active safety and driver assistance, considering both their structure and their function. These include the well-known standard systems such as Anti-lock braking system (ABS), Electronic Stability Control (ESC) or Adaptive Cruise Control (ACC). But it includes also new systems for protecting collisions protection, for changing the lane, or for convenient parking. The book aims at giving a complete picture focusing on the entire system. First, it describes the components which are necessary for assistance systems, such as sensors, actuators, mechatronic subsystems, and control elements. Then, it explains key features for the user-friendly design of human-machine interfaces between driver and assistance system. Finally, important characteristic features of driver assistance systems for particular vehicles are presented: Systems for commercial vehicles and motorcycles.

Racing Toward Zero - Kelly Senecal 2021

In Racing Toward Zero, the authors explore the issues inherent in developing sustainable transportation. They review the types of propulsion systems and vehicle options, discuss low-carbon fuels and alternative energy sources, and examine the role of regulation in curbing emissions. All technologies have an impact on the environment, from internal combustion engine vehicles to battery electric vehicles, fuel cell electric vehicles, and hybrids-there is no silver bullet. The battery electric vehicle may seem the obvious path to a sustainable, carbon-free transportation future, but it's not the only, nor necessarily the best, path forward. The vast majority of vehicles today use the internal combustion engine (ICE), and this is unlikely to change anytime soon. Improving the ICE and its fuels-entering a new ICE age-must be a main route on the road to zero emissions. How do we go green? The future requires a balanced approach to transportation. It's not a matter of choosing between combustion or electrification; it's combustion and electrification. As the authors say, "The future is eclectic." By harnessing the best qualities of both technologies, we will be in the best position to address our transportation future as quickly as possible

An Introduction to Modern Vehicle Design - Julian Happian-Smith 2001

An Introduction to Modern Vehicle Design starts from basic principles and builds up analysis procedures for all major aspects of vehicle and component design. Subjects of current interest to the motor industry - such as failure prevention, designing with modern material, ergonomics, and control systems - are covered in detail, with a final chapter discussing future trends in automotive design. Extensive use of illustrations, examples, and case studies provides the reader with a thorough understanding of design issues and analysis methods.