up its instruction with the most complete array of samples of any writing guide of this nature. The text continues its extremely thorough and accurate coverage of citation styles for a wide variety of disciplines. The fourteenth edition maintains Lester's successful approach while bringing new writing and documentation updates to assist the student researcher in keeping pace with electronic sources.

Large-Eddy Simulation for Acoustics Claus Wagner 2007-01-15 Noise pollution around airports, trains, and industries increasingly attracts environmental concern and regulation. Designers and researchers have intensified the use of large-eddy simulation (LES) for noise reduced industrial design and acoustical research. This 2007 book, written by 30 experts, presents the theoretical background of acoustics and of LES, followed by details about numerical methods, e.g. discretization schemes, boundary conditions, coupling aspects. Industrially relevant, hybrid RANS/LES techniques for acoustic source predictions are presented in detail. Many applications are featured ranging from simple geometries for mixing layers and jet flows to complex wing and car geometries. Selected applications include scientific investigations at industrial and university research institutions.


Sustainable Energy—without the Hot Air David J. C. MacKay 2009 Provides an overview of the sustainable energy crisis that is threatening the world's natural resources, explaining how energy consumption is estimated and how those numbers have been skewed by various factors and discussing alternate forms of energy that can and should be used.

Basic Maintenance Manual United States. War Department 1947 Feedback Systems Karl Johan Åström 2021-02-02 The essential introduction to the principles and applications of feedback systems—now fully revised and expanded This textbook covers the mathematics needed to model, analyze, and design feedback systems. Now more user-friendly than ever, this revised and expanded edition of Feedback Systems is a one-volume resource for students and researchers in mathematics and engineering. It has applications across a range of disciplines that utilize feedback in physical, biological, information, and economic systems. Karl Åström and Richard Murray use techniques from physics, computer science, and operations research to introduce control-oriented modeling. They begin with state space tools for analysis and design, including stability of solutions, Lyapunov functions, reachability, state feedback observability, and estimators. The matrix exponential plays a central role in the analysis of linear control systems, allowing a concise development of many of the key concepts for this class of models. Åström and Murray then develop and explain tools in the frequency domain, including transfer functions, Nyquist analysis, PID control, frequency domain design, and robustness. Features a new chapter on design principles and tools, illustrating the types of problems that can be solved using feedback includes a new chapter on fundamental limits and new material on the Routhe-Hurwitz criterion and root locus plots Provides exercises at the end of every chapter Comes with an electronic solutions manual An ideal textbook for undergraduate and graduate students indispensable for researchers seeking a self-contained resource on control theory

Cost, Effectiveness, and Deployment of Fuel Economy Technologies for Light-Duty Vehicles National Research Council 2015-09-28 The light-duty vehicle fleet is expected to undergo substantial technological changes over the next several decades. New powertrain designs, alternative fuels, advanced materials and significant changes to the vehicle body are being driven by increasingly stringent fuel economy and greenhouse gas emission standards. By the end of the next decade, cars and light-duty trucks will be more fuel efficient, weigh less, emit less air pollutants, have more safety features, and will be more expensive to purchase relative to current vehicles. Though the gasoline-powered spark ignition engine will continue to be the dominant powertrain configuration even through 2030, such vehicles will be equipped with advanced technologies, materials, electronics and controls, and aerodynamics. And by 2030, the deployment of alternative methods to propel and fuel vehicles and alternative modes of transportation, including autonomous vehicles, will be well underway. What are these new technologies - how will they work, and will some technologies be more effective than others? Written to inform The United States Department of Transportation's National Highway Traffic Safety Administration (NHTSA) and Environmental Protection Agency (EPA) Corporate Average Fuel Economy (CAFE) and greenhouse gas (GHG) emission standards, this new report from the National Research Council is a technical evaluation of costs, benefits, and implementation issues of fuel reduction technologies for next-generation light-duty vehicles. Cost, Effectiveness, and Deployment of Fuel Economy Technologies for Light-Duty Vehicles estimates the cost, potential efficiency improvements, and barriers to commercial deployment of technologies that might be employed from 2020 to 2030. This report describes these promising technologies and makes recommendations for their inclusion on the list of technologies applicable for the 2017-2025 CAFE standards.

Operations Management in Automotive Industries Marco Gobetto 2013-10-23 This book has proved its worth over the years as a text for courses in Production Management at the Faculty of Automotive Engineering in Turin, Italy, but deserves a wider audience as it presents a compendium of basics on industrial Management, since it covers all major topics required. It treats all subjects from product development and “make or buy”-decision strategies to the manufacturing systems setting and management through analysis of the main resources needed in production and finally exploring the supply chain management and the procurement techniques. The very last chapter recapitulates the previous ones by analyzing key management indicators to pursue the value creation that is the real purpose of every industrial enterprise. As an appendix, a specific chapter is dedicated to the basics of production management where all main relevant definitions, techniques and criteria are treated, including some numerical examples, in order to provide an adequate foundation for understanding the other chapters. This book will be of use not only to Automotive Engineering students but a wide range of readers who wish to gain insight in the world of automotive engineering and the automotive industry in general.

Assessment of Fuel Economy Technologies for Light-Duty Vehicles National Research Council 2011-07-03 Various combinations of commercially available technologies could greatly reduce fuel consumption in passenger cars, sport-utility vehicles, minivans, and other light-duty vehicles without compromising vehicle performance or safety. Assessment of Technologies for Improving Light Duty Vehicle Fuel Economy estimates the potential fuel savings and costs to consumers of available technology combinations for three types of engines: spark-ignition gasoline, compression-ignition diesel, and hybrid. According to its estimates, adopting the full combination of improved technologies in medium and large cars and pickup trucks with spark-ignition engines could reduce fuel consumption by 29 percent at an additional cost of $2,200 to the consumer. Replacing spark-ignition engines with diesel engines and components would yield fuel savings of about 37 percent at an added cost of approximately $5,900 per vehicle, and replacing spark-ignition engines with hybrid engines and components would reduce fuel consumption by 43 percent at an increase of $6,600 per vehicle. The book focuses on fuel consumption—the amount of fuel consumed in a given driving distance—because energy savings are directly related to the amount of fuel used. In contrast, fuel economy measures how far a vehicle will travel with a gallon of fuel. Because fuel consumption data indicate money saved on fuel purchases and reductions in carbon dioxide emissions, the book finds that vehicle stickers should provide consumers with fuel consumption data in addition to fuel economy information.

Transitions to Alternative Vehicles and Fuels National Research Council 2013-04-14 For a century, almost all light-duty vehicles (LDVs) have been powered by internal combustion engines operating on petroleum fuels. Energy security concerns about petroleum imports and the effect of greenhouse gas (GHG) emissions on global climate are driving interest in alternatives. Transitions to Alternative Vehicles and Fuels assesses the potential for reducing petroleum consumption and GHG emissions by 80 percent across the U.S. LDV fleet by 2050, relative to 2005. This report examines the current capability and estimated future performance and costs for each vehicle type and non-petroleum-based fuel technology as options that could significantly contribute to these goals. By analyzing scenarios that combine various fuel and vehicle pathways, the report also identifies barriers to implementation of these technologies and suggests policies to achieve the desired reductions. Several scenarios are promising, but strong, and effective policies such as research and development, subsidies, energy taxes, or regulations will be necessary to overcome barriers, such as cost and consumer choice.

Porsche Karl E. Ludvigsen 1977