No. 3 (6), May, 2020

Scientific Library of BNTU

InfoGenerator

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In this issue:

Dear friends!

The Scientific Library of BNTU continues to inform teachers, students and university staff about resources from library collections and open access resources. This issue of InfoGenerator digest presents books and other useful information on such topics as transportation system, transport economy, theory of mechanisms and machines, mechanics of materials, motor vehicles structures, automobile engines, vehicle dynamics, road vehicle safety and others.

We would like to mention, that some library resources are available for our users remotely. If you need more information about access conditions, ask for help information services department staff.

Scientific Library of BNTU wishes you successful and productive work and study!

Let's go global!

For educational purposes only

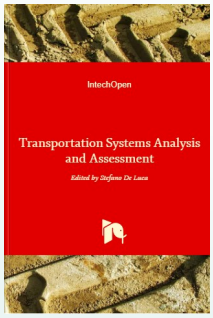
Eastern and Western Europe, East and South Asia, South America, Africa - it's all the places our students come from. So you could have at least one foreign student in your group.

About **2,500 foreigners citizens** from **44 countries** study at BNTU. It's the students from China, Sri Lanka, Lebanon, Egypt, Israel, Turkey, Venezuela, Ecuador, Colombia, Vietnam, Nigeria, France and etc.

Let's find out the students from what countries choose our university to study using the data for May 2020.

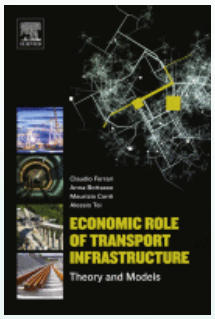
More

Transportation System. Transport Economy



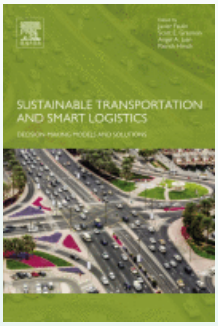
Transportation Systems Analysis and Assessment / ed. : S. De Luca, R. Di Pace, B. Djordjevic. – IntechOpen, 2020. – Doi : https://doi.org/10.5772/intechopen.75294

The transportation system is the backbone of any social and economic system, and is also a very complex system in which users, transport means, technologies, services, and infrastructures have to cooperate with each other to achieve common and unique goals. The aim of this book is to present a general overview on some of the main challenges that transportation planners and decision makers are faced with. The book addresses different topics that range from user's behavior to travel demand simulation, from supply chain to the railway infrastructure capacity, from traffic safety issues to Life Cycle Assessment, and to strategies to make the transportation system more sustainable.



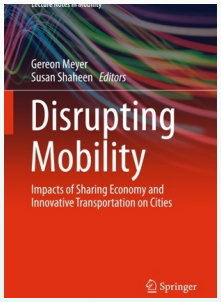
Economic Role of Transport Infrastructure : Theory and Models / C. Ferrari [et al.]. – Elsevier, 2019. – 310 p. – Doi: https://doi.org/10.1016/C2016-0-03558-1

Economic Role of Transport Infrastructure: Theory and Models helps evaluate the economic effects of transport infrastructure investments within a cost-benefit framework for maximum economic impact. The book analyzes the primary empirical approaches used to gauge the economic effects of transport infrastructures, providing in-depth discussions on data issues, input-output techniques, and econometric methodologies. Users will find empirical evidence organized from a transport mode point-of-view, inspiring researchers to conduct comparative analysis for various infrastructure projects. Topics cover infrastructure's impact on economic growth using theoretical frameworks, including exogenous growth models, endogenous growth models, and new economic geography models.



Sustainable Transportation and Smart Logistics : Decision-Making Models and Solutions / ed.: Javier Faulin [et al.]. – Elsevier, 2019. – 534 p. – Doi: https://doi.org/10.1016/C2017-0-00810-8

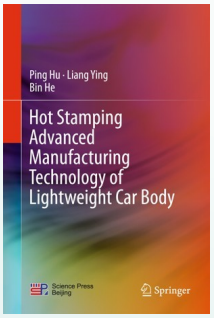
Sustainable Transportation and Smart Logistics: Decision-Making Models and Solutions provides deterministic and probabilistic models for transportation logistics problem-solving and decision-making. The book presents an overview of the intersections between sustainability, transportation, and logistics, and delves into the current problems associated with the implementation of sustainable transportation and smart logistics in urban settings.



Disrupting Mobility. Impacts of Sharing Economy and Innovative Transportation on Cities / ed. : G. Meyer, S. Shaheen. – Springer, 2017. – 346 p. – Doi : https://doi.org/10.1007/978-3-319-51602-8

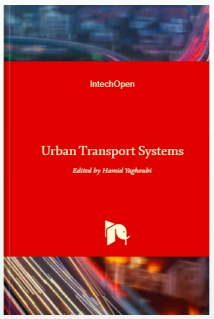
This book explores the opportunities and challenges of the sharing economy and innovative transportation technologies with regard to urban mobility. Written by government experts, social scientists, technologists and city planners from North America, Europe and Australia, the papers in this book address the impacts of demographic, societal and economic trends and the fundamental changes arising from the increasing automation and connectivity of vehicles, smart communication technologies, multimodal transit services, and urban design.

Transportation System. Transport Economy



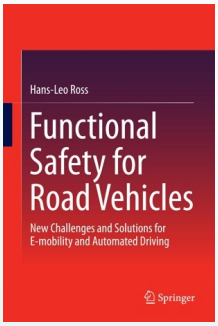
Hu, P. Hot Stamping Advanced Manufacturing Technology of Lightweight Car Body / P. Hu, L. Ying, B. He. – Springer, 2017. – 327 p. – Doi : https://doi.org/10.1007/978-981-10-2401-6

This book summarizes the advanced manufacturing technology of original innovations in hot stamping of lightweight car body. Emphasis has been placed on the independently developed hot stamping process and equipment, which help describe the theoretical and experimental research on key problems involving stress field, thermal field and phase transformation field in hot stamping process. Finally, the book presents some application cases of hot stamping technology such as the lightweight car body design using hot stamping components and gradient hardness components, and the cooling design of the stamping tool.



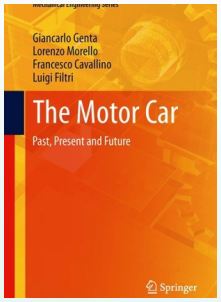
Urban Transport Systems / ed. : H. Yaghoubi. – IntechOpen, 2017. – 227 p. – Doi : https://doi.org/10.5772/62814

This book also studies the technical parameters and provides a comprehensive overview of the significant characteristics for urban transportation systems, including energy management systems, wireless communication systems, operations and maintenance systems, transport serviceability, environmental problems and solutions, simulation, modelling, analysis, design, safety and risk, standards, traffic congestion, ride quality, air quality, noise and vibration, financial and economic aspects, pricing strategies, etc. This professional book as a credible source can be very applicable and useful for all professors, researchers, students, experienced technical professionals, practitioners and others interested in urban transportation systems.



Ross, H.-L. Functional Safety for Road Vehicles. New Challenges and Solutions for E-mobility and Automated Driving / H.-L. Ross. – Springer, 2016. – 276 p. – Doi : https://doi.org/10.1007/978-3-319-33361-8

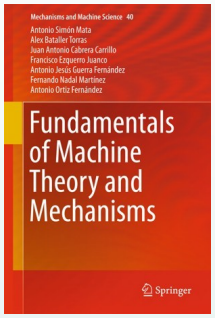
This book highlights the current challenges for engineers involved in product development and the associated changes in procedure they make necessary. Methods for systematically analyzing the requirements for safety and security mechanisms are described using examples of how they are implemented in software and hardware, and how their effectiveness can be demonstrated in terms of functional and design safety are discussed.



The Motor Car. Past, Present and Future / G. Genta [et al.]. – Springer, 2014. – 673 p. – Doi : https://doi.org/10.1007/978-94-007-8552-6

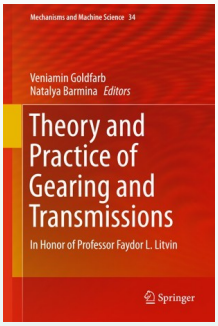
This book is an introduction to automotive engineering, to give freshmen ideas about this technology. The text is subdivided in parts that cover all facets of the automobile, including legal and economic aspects related to industry and products, product configuration and fabrication processes, historic evolution and future developments.

Theory of Mechanisms and Machines



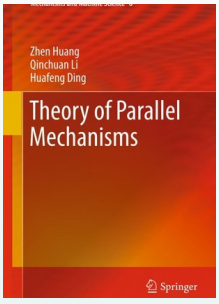
Fundamentals of Machine Theory and Mechanisms / A. S. Mata [et. al.]. – Springer, 2016. – 415 p. – Doi : https://doi.org/10.1007/978-3-319-31970-4

This book covers the basic contents for an introductory course in Mechanism and Machine Theory. The topics dealt with are: kinematic and dynamic analysis of machines, introduction to vibratory behaviour, rotor and piston balance, kinematics of gears, ordinary and planetary gear trains and synthesis of planar mechanisms. A new approach to dimensional synthesis of mechanisms based on turning functions has been added for closed and open path generation using an optimization method based on evolutionary algorithms. The text, developed by a group of experts in kinematics and dynamics of mechanisms at the University of Málaga, Spain, is clear and is supported by more than 350 images. More than 60 outlined and explained problems have been included to clarify the theoretical concepts.



Theory and Practice of Gearing and Transmissions. In Honor of Professor Faydor L. Litvin / ed. : V. Goldfarb, N. Barmina. – Springer, 2016. – 452 p. – Doi : https://doi.org/10.1007/978-3-319-19740-1

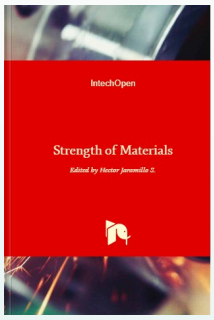
This book brings together papers from all spheres of mechanical engineering related to gears and transmissions, from fundamentals to advanced applications, from academic results in numerical and experimental research, to new approaches to gear design and aspects of their optimization synthesis, and to the latest developments in manufacturing. Furthermore, this volume honours the work of Faydor L. Litvin on the 100th anniversary of this birth. He is acknowledged as the founder of the modern theory of gearing. An exhaustive list of his contributions and achievements and a biography are included.



Huang, Z. Theory of Parallel Mechanisms / Z. Huang, Q. Li, H. Ding. – Springer, 2013. – 430 p. – (Mechanisms and Machine Science). – Doi : https://doi.org/10.1007/978-94-007-4201-7

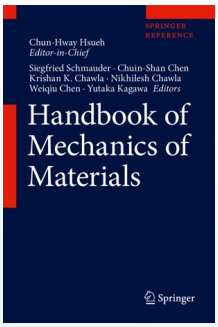
In mechanism synthesis, the synthesis for spatial parallel mechanisms is discussed, and the synthesis method of difficult 4-DOF and 5-DOF symmetric mechanisms, which was first put forward by the author in 2002, is introduced in detail. Besides, the three-order screw system and its space distribution of the kinematic screws for infinite possible motions of lower mobility mechanisms are both analyzed.

Mechanics of Materials



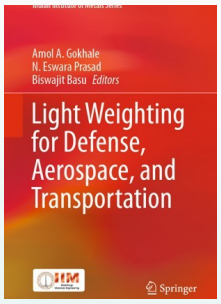
Strength of Materials / ed. : H. S. Jaramillo, Ju. A. Avila, C. Chen. – IntechOpen, 2020. – Doi : https://doi.org/10.5772/intechopen.83265

The book contains eleven peer-reviewed chapters organized into two sections. Section 1 is focused on the strength of metals and composites materials, in other words on traditional materials used in engineering projects. Section 2 contains chapters on sustainable materials or non-conventional materials.



Handbook of Mechanics of Materials / ed. : Ch.-H. Hsueh [et al.]. – Springer, 2019. – 2430 p. – Doi : https://doi.org/10.1007/978-981-10-6884-3

This book provides a comprehensive reference for the studies of mechanical properties of materials over multiple length and time scales. The topics include nanomechanics, micromechanics, continuum mechanics, mechanical property measurements, and materials design. The handbook employs a consistent and systematic approach offering readers a user friendly reference ideal for frequent consultation. It is appropriate for an audience at of graduate students, faculties, researchers, and professionals in the fields of Materials Science, Mechanical Engineering, Civil Engineering, Engineering Mechanics, and Aerospace Engineering.



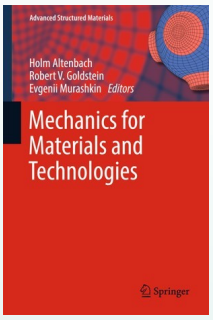
Light Weighting for Defense, Aerospace, and Transportation / ed. : A. A. Gokhale, N. E. Prasad, B. Basu. – Springer, 2019. – 138 p. – Doi : https://doi.org/10.1007/978-981-15-1263-6

This book covers recent developments and current status of various materials, designs, and manufacturing practices which together contribute towards weight reduction of systems used in defense, aerospace, and automotive sectors. The topics covered in the volume range from new manufacturing methods such as additive manufacturing, intermetallics, aluminum-based solutions, near net-shaped processes, ultra-light weight metal foam and honeycomb based sandwich structures, advanced high strength steels, magnesium alloy castings and carbon fiber composites.

National Aerospace University H.E. Zhukovsky "Kharkiv Aviation Institute"

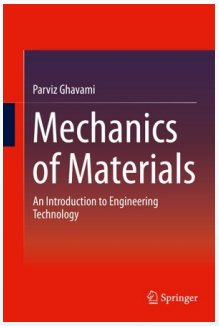
Educational and methodical literature on discipline “Mechanics of Materials”.

Mechanics of Materials



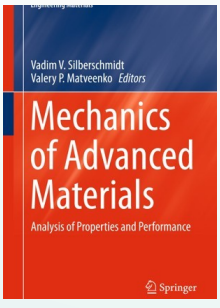
Mechanics for Materials and Technologies / ed. : H. Altenbach, R. V. Goldstein, E. Murashkin. – Springer, 2017. – 460 p. – Doi : https://doi.org/10.1007/978-3-319-56050-2

This book shows impressively how complex mathematical modeling of materials can be applied to technological problems. Top-class researchers present the theoretical approaches in modern mechanics and apply them to real-world problems in solid mechanics, creep, plasticity, fracture, impact, and friction. They show how they can be applied to technological challenges in various fields like aerospace technology, biological sciences and modern engineering materials.



Ghavami, P. Mechanics of Materials. An Introduction to Engineering Technology / P. Ghavami. – Springer, 2015. – 258 p. – Doi : https://doi.org/10.1007/978-3-319-07572-3

This book, framed in the processes of engineering analysis and design, presents concepts in mechanics of materials for students in two-year or four-year programs in engineering technology, architecture, and building construction, as well as for students in vocational schools and technical institutes.



Mechanics of Advanced Materials. Analysis of Properties and Performance / ed.: V. V. Silberschmidt, V. P. Matveenko. – Springer, 2015. – 205 p. – Doi : https://doi.org/10.1007/978-3-319-17118-0

The last decades have seen a large extension of types of materials employed in various applications. In many cases these materials demonstrate mechanical properties and performance that vary significantly from those of their traditional counterparts. Such uniqueness is sought – or even specially manufactured – to meet increased requirements on modern components and structures related to their specific use. As a result, mechanical behaviors of these materials under different loading and environmental conditions are outside the boundaries of traditional mechanics of materials, presupposing development of new characterization techniques, theoretical descriptions and numerical tools.

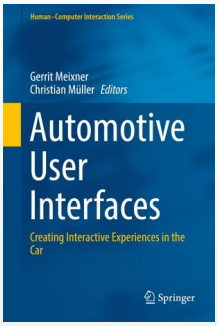
Motor Vehicles Structures

Childs, P. R. N. Mechanical Design Engineering Handbook / P. R. N. Childs. – 2nd ed. – Butterworth-Heinemann, 2019. – 982 p. – Doi : https://doi.org/10.1016/C2016-0-05252-X

Mechanical Design Engineering Handbook, Second Edition, is a straight-talking and forward-thinking reference covering the design, specification, selection, use and integration of the machine elements that are fundamental to a wide range of engineering applications. This updated edition includes new material on tolerancing, alternative approaches to design, and robotics, as well as references to the latest ISO and US engineering regulations. Sections cover bearings, shafts, gears, seals, belts and chains, clutches and brakes, springs, fasteners, pneumatics and hydraulics, amongst other core mechanical elements.

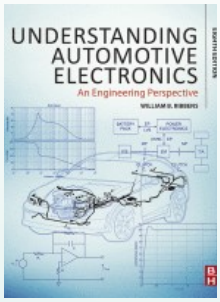
Intelligent Vehicles : Enabling Technologies and Future Developments / ed. : F. Jiménez. – Butterworth-Heinemann, 2018. – 504 p. – Doi : https://doi.org/10.1016/C2016-0-04123-2

Intelligent Road Vehicles examines specific aspects of intelligent vehicles such as enabling technologies, human factors and an analysis of social and economic impacts. The book is an invaluable resource for those pursuing deeper knowledge in the intelligent vehicles field, providing readers with an idea of current and future technologies, current projects and developments and the future of intelligent vehicles.



Automotive User Interfaces : Creating Interactive Experiences in the Car / ed. : G. Meixner, Ch. Müller. – Springer, 2017. – 510 p. – Doi : https://doi.org/10.1007/978-3-319-49448-7

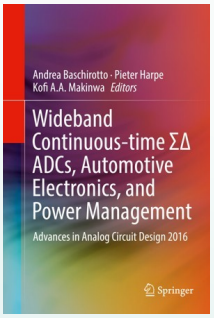
This book focuses on automotive user interfaces for in-vehicle usage, looking at car electronics and its software of hidden technologies (e.g., ASP, ESP), comfort functions (e.g., navigation, communication, entertainment) and driver assistance (e.g., distance checking). The increased complexity of automotive user interfaces, driven by the need for using consumer electronic devices in cars as well as autonomous driving, has sparked a plethora of new research within this field of study.



Ribbens, W. B. Understanding Automotive Electronics : An Engineering Perspective / W. B. Ribbens. – 8th ed.– Butterworth–Heinemann, 2017. – 710 p. – Doi: https://doi.org/10.1016/C2016–0–00011–6

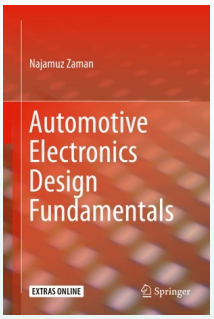
Thoroughly updated throughout, this new edition moves away from introductory mechanic-level electronics to cover hot topics such as automotive camera systems and typical electronic camera systems, hybrid control, AUTOSAR (AUTomotive Open System ARchitecture) and vehicle networks. Comprehensive coverage of automotive electronics and control, including the latest technology in telematics, active safety, entertainment, and communications are also included.

Motor Vehicles Structures



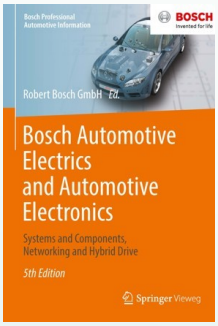
Wideband Continuous-time ΣΔ ADCs, Automotive Electronics, and Power Management. Advances in Analog Circuit Design 2016 / ed. : A. Baschirotto, P. Harpe, K. A. A. Makinwa. – Springer, 2017. – 357 p. – Doi : https://doi.org/10.1007/978-3-319-41670-0

This book is based on the 18 tutorials presented during the 25th workshop on Advances in Analog Circuit Design. Expert designers present readers with information about a variety of topics at the frontier of analog circuit design, including low-power and energy-efficient analog electronics, with specific contributions focusing on the design of continuous-time sigma-delta modulators, automotive electronics, and power management.



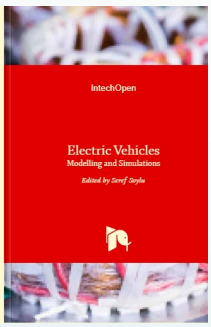
Zaman, N. Automotive Electronics Design Fundamentals / N. Zaman. – Springer, 2015. – 270 p. – Doi : https://doi.org/10.1007/978-3-319-17584-3

This book explains the topology behind automotive electronics architectures and examines how they can be profoundly augmented with embedded controllers. These controllers serve as the core building blocks of today's vehicle electronics. Rather than simply teaching electrical basics, this unique resource focuses on the fundamental concepts of vehicle electronics architecture, and details the wide variety of Electronic Control Modules (ECMs) that enable the increasingly sophisticated "bells & whistles" of modern designs.



Bosch Automotive Electrics and Automotive Electronics: Systems and Components, Networking and Hybrid Drive / ed. : R. B. GmbH. – Springer, 2014. – 530 p. – (Bosch Professional Automotive Information). – Doi : https://doi.org/10.1007/978-3-658-01784-2

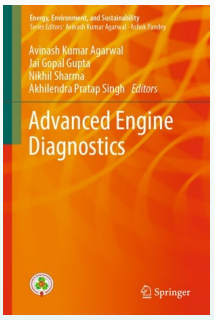
The significance of electrical and electronic systems has increased considerably in the last few years and this trend is set to continue. The characteristics feature of innovative systems is the fact that they can work together in a network. This requires powerful bus systems that the electronic control units can use to exchange information. The existing chapters have also been updated, so that this new edition brings the reader up to date on the subjects of electrical and electronic systems in the motor vehicle.



Electric Vehicles : Modelling and Simulations / ed. : S. Soylu. – IntechOpen, 2011. – Doi : https://doi.org/10.5772/958

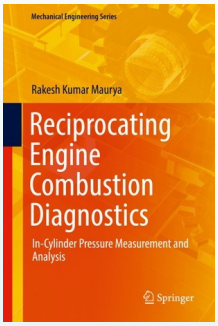
In this book, modeling and simulation of electric vehicles and their components have been emphasized chapter by chapter with valuable contribution of many researchers who work on both technical and regulatory sides of the field. Mathematical models for electrical vehicles and their components were introduced and merged together to make this book a guide for industry, academia and policy makers.

Automobile Engines



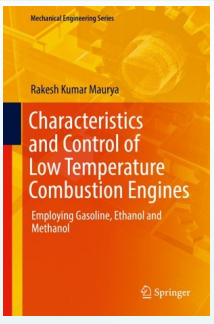
Advanced Engine Diagnostics / ed. : A. K. Agarwal [et. al.]. – Springer, 2019. – 257 p. – (Energy, Environment, and Sustainability). – Doi : https://doi.org/10.1007/978-981-13-3275-3

This book describes the discusses advanced fuels and combustion, emission control techniques, after-treatment systems, simulations and fault diagnostics, including discussions on different engine diagnostic techniques such as particle image velocimetry (PIV), phase Doppler interferometry (PDI), laser ignition. This volume bridges the gap between basic concepts and advanced research in internal combustion engine diagnostics, making it a useful reference for both students and researchers whose work focuses on achieving higher fuel efficiency and lowering emissions.



Maurya, R. K. Reciprocating Engine Combustion Diagnostics. In-Cylinder Pressure Measurement and Analysis / R. K. Maurya. – Springer, 2019. – 625 p. – Doi : https://doi.org/10.1007/978-3-030-11954-6

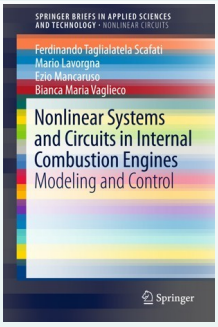
This book deals with in-cylinder pressure measurement and its post-processing for combustion quality analysis of conventional and advanced reciprocating engines. It offers insight into knocking and combustion stability analysis techniques and algorithms in SI, CI, and LTC engines, and places special emphasis on the digital signal processing of in-cylinder pressure signal for online and offline applications. The text gives a detailed description on sensors for combustion measurement, data acquisition, and methods for estimation of performance and combustion parameters.



Maurya, R. K. Characteristics and Control of Low Temperature Combustion Engines. Employing Gasoline, Ethanol and Methanol / R. K Maurya. – Springer, 2018. – 553 p. – (Mechanical Engineering Series). – Doi : https://doi.org/10.1007/978-3-319-68508-3

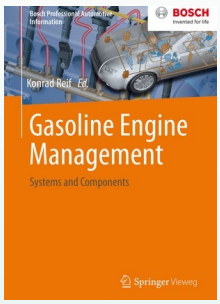
This book deals with novel advanced engine combustion technologies having potential of high fuel conversion efficiency along with ultralow NOx and particulate matter (PM) emissions. It offers insight into advanced combustion modes for efficient utilization of gasoline like fuels. Fundamentals of various advanced low temperature combustion (LTC) systems such as HCCI, PCCI, PPC and RCCI engines and their fuel quality requirements are also discussed.

Automobile Engines



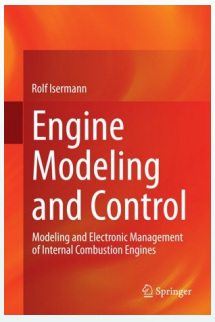
Nonlinear Systems and Circuits in Internal Combustion Engines : Modeling and Control / F. Taglialatela-Scafati [et al.]. – Springer, 2018. – 89 p. – Doi : https://doi.org/10.1007/978-3-319-67140-6

The brief contains advanced methodologies –based on neural networks and soft-computing approaches among others– for the compensation of engine nonlinearities by using the combustion pressure signal and proposes several techniques for the reconstruction of this signal on the basis of different engine parameters, including engine-block vibration and crankshaft rotational speed. Another topic of the book is the diagnosis of the nonlinearities of injection systems and their balancing, which is a mandatory task for the new generation of gasoline direct injection engines.



Gasoline Engine Management : Systems and Components / ed. : K. Reif. – Springer, 2015. – 363 p. – (Bosch Professional Automotive Information). – Doi : https://doi.org/10.1007/978-3-658-03964-6

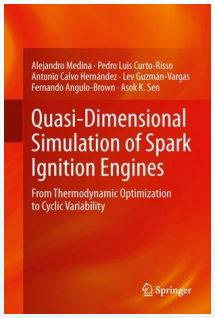
The call for environmentally compatible and economical vehicles necessitates immense efforts to develop innovative engine concepts. Technical concepts such as gasoline direct injection helped to save fuel up to 20 % and reduce CO2-emissions. Descriptions of the cylinder-charge control, fuel injection, ignition and catalytic emission-control systems provides comprehensive overview of today´s gasoline engines. This book also describes emission-control systems and explains the diagnostic systems. The publication provides information on engine-management-systems and emission-control regulations.



Isermann, R. Engine Modeling and Control. Modeling and Electronic Management of Internal Combustion Engines / R. Isermann. – Springer, 2014. – 646 p. – Doi : https://doi.org/10.1007/978-3-642-39934-3

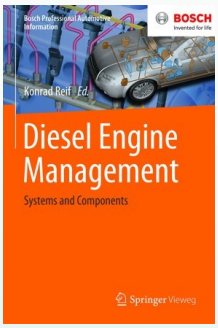
The book treats physically-based as well as models based experimentally on test benches for gasoline (spark ignition) and diesel (compression ignition) engines and uses them for the design of the different control functions.

Automobile Engines



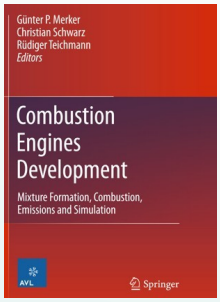
Quasi-Dimensional Simulation of Spark Ignition Engines : From Thermodynamic Optimization to Cyclic Variability / A. Medina [et al.]. – Springer, 2014. – 201 p. – Doi : https://doi.org/10.1007/978-1-4471-5289-7

Quasi-dimensional computer simulation of spark ignition engines is a powerful but affordable tool which obtains realistic estimations of a wide variety of variables for a simulated engine keeping insight the basic physical and chemical processes involved in the real evolution of an automotive engine. With low computational costs, it can optimize the design and operation of spark ignition engines as well as it allows to analyze cycle-to-cycle fluctuations.



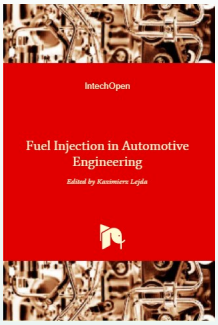
Reif, K. Diesel Engine Management : Systems and Components / K. Reif. – Springer, 2014. – 381 p. – Doi : https://doi.org/10.1007/978-3-658-03981-3

This reference book provides a comprehensive insight into todays diesel injection systems and electronic control. It focusses on minimizing emissions and exhaust-gas treatment. Innovations by Bosch in the field of diesel-injection technology have made a significant contribution to the diesel boom. Calls for lower fuel consumption, reduced exhaust-gas emissions and quiet engines are making greater demands on the engine and fuel-injection systems.



Combustion Engines Development : Mixture Formation, Combustion, Emissions and Simulation / ed. : G. P. Merker, Ch. Schwarz, R. Teichmann. – Springer, 2012. – 660 p. – Doi : https://doi.org/10.1007/978-3-642-14094-5

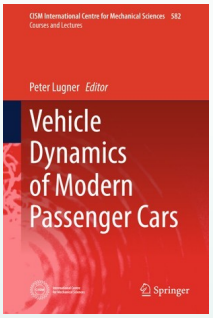
In the development of engines and vehicles it is nowadays standard practice to use commercially available computing programmes for simulation, not only of the transient reaction of vehicles or of the complete driveshaft, but also of the highly unsteady processes in the combustion chamber of an engine. Normally the source code is not available for these computing programmes and it takes too much time to study the respective specifications, so the users often do not have sufficient knowledge about the physical and chemical contents of the approaches that the programmes are based on.



Fuel Injection in Automotive Engineering / ed. : K. Leida. – IntechOpen, 2011. – Doi : https://doi.org/10.5772/2553

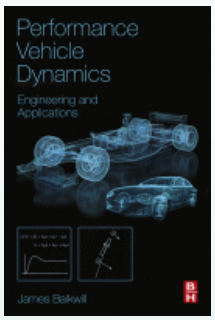
The main topic of "Fuel injection in automotive engineering" book is fundamental process that determines the development of internal combustion engines and performances of automotive vehicles. The book collects original works focused on up-to-date issues relevant to improving injection phenomena per se and injection systems as the engine key components.

Vehicle Dynamics. Road Vehicle Safety



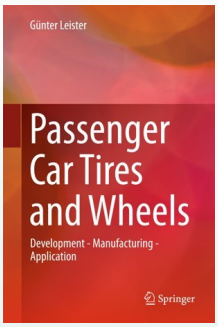
Vehicle Dynamics of Modern Passenger Cars / ed. : P. Lugner. – Springer, 2019. – 382 p. – Doi : https://doi.org/10.1007/978-3-319-79008-4

The book provides the essential features necessary to understand and apply the mathematical-mechanical characteristics and tools for vehicle dynamics including control mechanism. The presented modeling of the tire behavior, also for transient changes of the contact patch properties, shows the necessary mathematical descriptions used for the simulation of the vehicle dynamics. The introduction to control for cars and its extension to complex applications using e.g. observers and state estimators is a main part of the book.



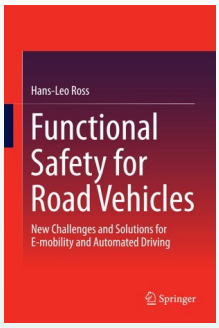
Balkwill, J. Performance Vehicle Dynamics : Engineering and Applications / J. Balkwill. – Butterworth-Heinemann, 2018. – 360 p. – Doi : https://doi.org/10.1016/C2016-0-03741-5

Performance Vehicle Dynamics: Engineering and Applications offers an accessible treatment of the complex material needed to achieve level seven learning outcomes in the field. Users will gain a complete, structured understanding that enables the preparation of useful models for characterization and optimization of performance using the same Automotive or Motorsport industry techniques and approaches. As the approach to vehicle dynamics has changed over time, largely due to advances in computing power, the subject has, in practice, always been computer intensive, but this use has changed, with modeling of relatively complex vehicle dynamics topics now even possible on a PC.



Leister, G. Passenger Car Tires and Wheels. Development - Manufacturing – Application / G. Leister. – Springer, 2018. – 283 p. – Doi : https://doi.org/10.1007/978-3-319-50118-5

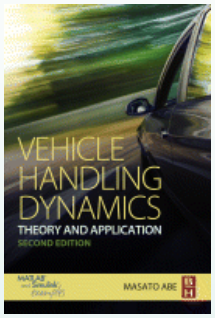
Starting from the beginning, this book explains the development process of all parts related to the topics tire, wheel and tire pressure monitoring system. This is continued by the modern project management methods in the development process of the parts and the necessary tests to build up this safety relevant components. Modern methods for simulations are described.



Ross, H.-L. Functional Safety for Road Vehicles. New Challenges and Solutions for E-mobility and Automated Driving / H.-L. Ross. — Springer, 2016. — 276 p. — Doi : https://doi.org/10.1007/978-3-319-33361-8

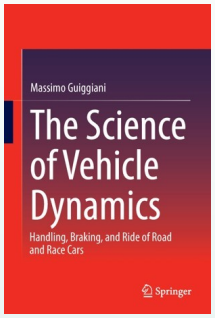
This book highlights the current challenges for engineers involved in product development and the associated changes in procedure they make necessary. Methods for systematically analyzing the requirements for safety and security mechanisms are described using examples of how they are implemented in software and hardware, and how their effectiveness can be demonstrated in terms of functional and design safety are discussed.

Vehicle Dynamics. Road Vehicle Safety



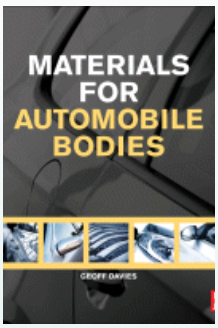
Abe, M. Vehicle Handling Dynamics : Theory and Application / M. Abe. – 2nd ed. – Butterworth-Heinemann, 2015. – 322 p. – Doi : https://doi.org/10.1016/C2014-0-04001-4

Vehicle Handling Dynamics, Second Edition, provides comprehensive coverage of vehicle dynamics, enabling readers to visualize and invent better vehicles. Begins with an overview of the fundamental theories of vehicle handling dynamics, based on simple equations of motion. The book then extends to driver-vehicle behavior, handling quality and active vehicle motion control.



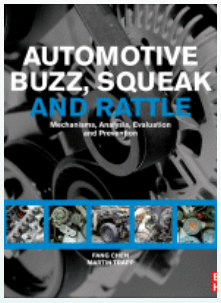
Guiggiani, M. The Science of Vehicle Dynamics. Handling, Braking, and Ride of Road and Race Cars / M. Guiggiani. – Springer, 2014. – 364 p. – Doi : https://doi.org/10.1007/978-94-017-8533-4

In this book, mathematical models of vehicles are developed, always paying attention to state the relevant assumptions and to provide explanations for each step. This approach allows for a deep, yet simple, analysis of the dynamics of vehicles, without having to resort to foggy concepts. The reader will soon achieve a clear understanding of the subject, which will be of great help both in dealing with the challenges of designing and testing new vehicles and in tackling new research topics.



Davies, G. Materials for Automobile Bodies / G. Davies. – 2nd ed. – Butterworth-Heinemann, 2012. – 416 p. – Doi : https://doi.org/10.1016/C2010-0-66319-X

Materials for Automobile Bodies brings together a wealth of information on automotive materials and material technologies to provide designers and vehicle body engineers with both a solid grounding and a quick reference to inform their material choices. Coverage includes materials processing, formability, welding and joining, anti-corrosion technologies, plus a comprehensive consideration of the implications of materials selection on these processes.



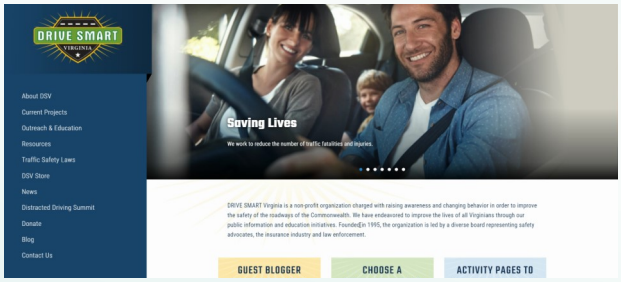
Trapp, M. Automotive Buzz, Squeak and Rattle : Mechanisms, Analysis, Evaluation and Prevention / M. Trapp, F. Chen. – Butterworth-Heinemann, 2011. – 296 p. – Doi : https://doi.org/10.1016/C2009-0-64152-0

Buzz, squeak, and rattle (BSR) is the automotive industry term for the audible engineering challenges faced by all vehicle and component engineers. Minimizing BSR is of paramount importance when designing vehicle components and whole vehicle assemblies. This is the only book dedicated to the subject. It provides a self-contained reference to the background theory, testing, analysis, and elimination of BSR. Written for practicing engineers and industry researchers, the book has a strong focus on real-world applications making it an ideal handbook for those working in this important area.

Traffic Safety

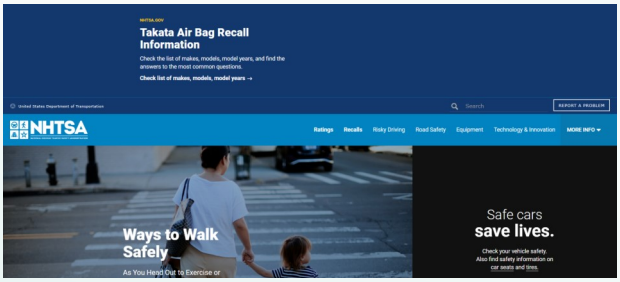
Arrive Alive

Effective road safety information portal that will enhance awareness of road safety and save lives.



DRIVE SMART Virginia

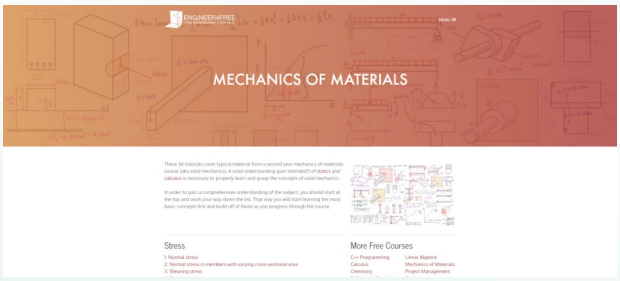
DRIVE SMART Virginia is non-profit organization founded on the principle that traffic fatalities and injuries are preventable.



National Highway Traffic Safety Administration

Mission National Highway Traffic Safety Administration is to save lives, prevent injuries, and reduce economic costs due to road traffic crashes, through education, research, safety standards, and enforcement.

Learning Automobile Engineering: Video Resources

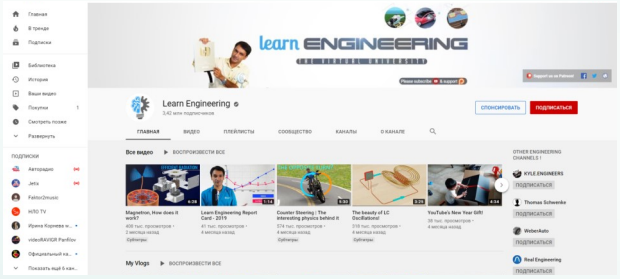


Engineer4Free

These 56 tutorials cover typical material from a second year mechanics of materials course (aka solid mechanics).

Mechanical Engineering: Mechanics of Materials

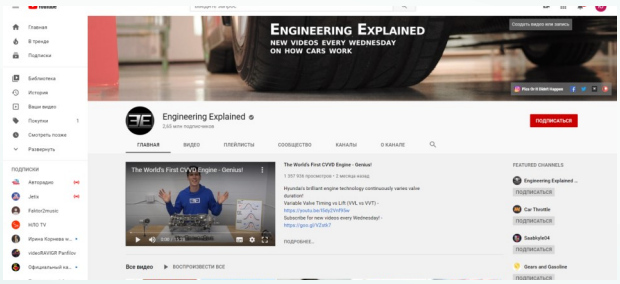
Saylor Academy's mission is to build access to education for students through innovative credentialing, college credit partnerships, and empowering technology. Through a network of learners, educators, and partners, the Academy is forging affordable, online, any-time pathways to student success.



Learn Engineering

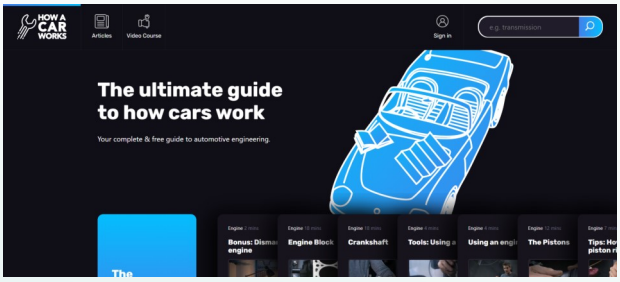
Automobile Engineering

Learning Automobile Engineering: Video Resources



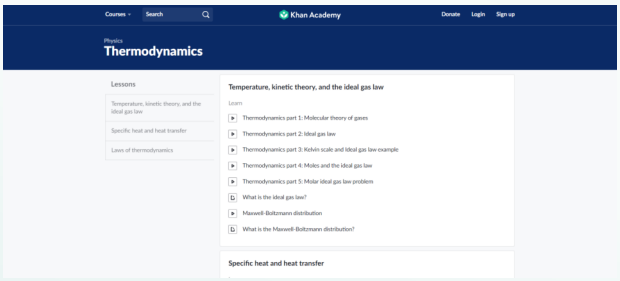
Engineering Explained

How do cars work? It's a simple question, without a simple answer. That's what this channel is for! You could search the web endlessly for consumable information, or you can watch my simple to understand videos.



How a Car Works

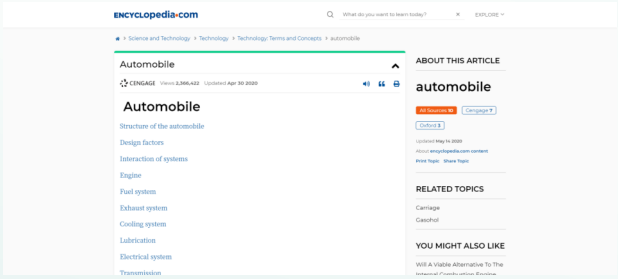
The ultimate guide to how cars work.



Khan Academy

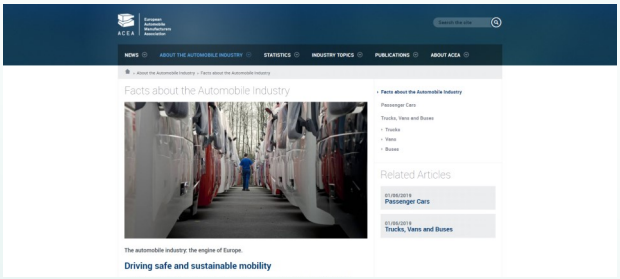
Thermodynamics classes.

Automobiles: Facts, Statistics and History



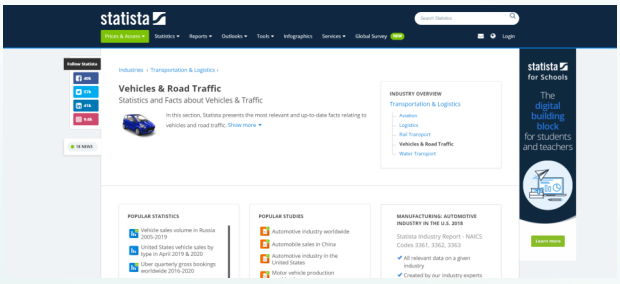
Encyclopedia.com

As the Internet's premier collection of online encyclopedias, Encyclopedia.com provides you reference entries from credible, published sources like Oxford University Press and Columbia Encyclopedia.



ACEA. Facts about the Automobile Industry

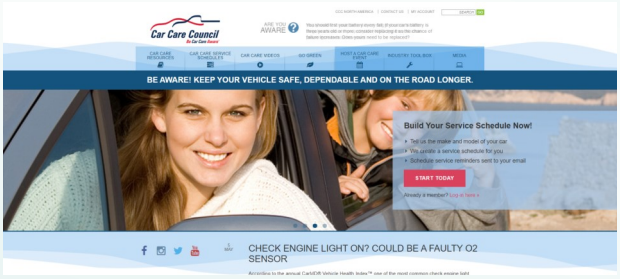
About the Automobile Industry



Statista. Vehicles & Road Traffic

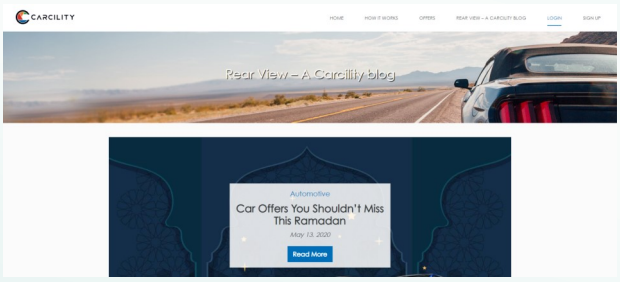
In this section, Statista presents the most relevant and up-to-date facts relating to vehicles and road traffic.

Maintenance and Repair of Motor Vehicles



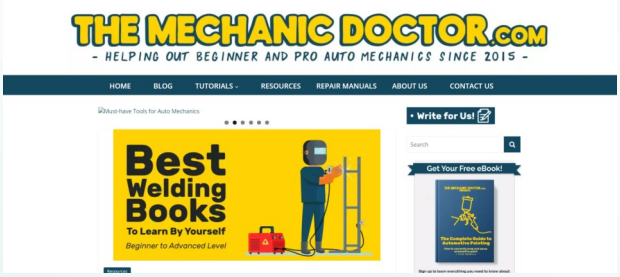
Be Car Care Aware

Consumer education program about the benefits of regular vehicle care, maintenance and repair, designed to provide knowledge from all segments of the automotive aftermarket industry.



Carcility

Carcility blog.



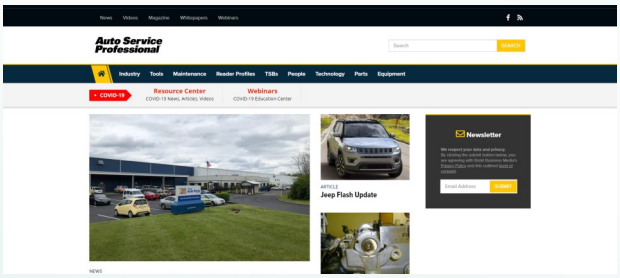
The Mechanic Doctor

Car repair video tutorials and resources for auto mechanics. Find tips and hints, learning resources, news and anything car-related.

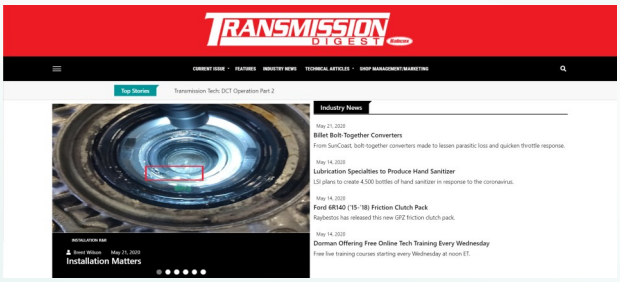
Maintenance and Repair of Motor Vehicles

AA1car.com

Automotive Diagnostic Repair Help



Auto Service Professional



Transmission Digest

News

Trends shaping the future of automobile industry

With the advancement of technologies like AI (artificial intelligence), robotics and IoT (Internet of Things), the automobile industry has made some significant leaps towards growth and development. The utopian image of future – with cars that run on eco-friendly fuel and can drive themselves – isn't too far away now.

More

EU Commission planning 'green' auto industry rescue: report

A draft proposal seen by German media suggests the EU is planning on pumping billions into its shattered auto industry. However, the aid would be contingent on promoting "cleaner cars."

More

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No. 3 (6), May, 2020

Reprint with reference to "InfoGenerator".

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