

# The Design Of Eddy Current Magnet Brakes

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Mathematical Models for the Design of Electrical Machines - Frédéric Dubas 2021-03-15

This book is a comprehensive set of articles reflecting the latest advances and developments in mathematical modeling and the design of

electrical machines for different applications. The main models discussed are based on the: i) Maxwell-Fourier method (i.e., the formal resolution of Maxwell's equations by using the separation of variables method and the Fourier's

series in 2-D or 3-D with a quasi-Cartesian or polar coordinate system); ii) electrical, thermal and magnetic equivalent circuit; iii) hybrid model. In these different papers, the numerical method and the experimental tests have been used as comparisons or validations.

Electrical Control Systems in Industry - Charles Seymour Siskind 1963

**Brake Design and Safety** - Rudolf Limpert  
2011-10-04

The objectives of this third edition of an SAE classic title are to provide readers with the basic theoretical fundamentals and analytical tools necessary to design braking systems for passenger vehicles and trucks that comply with safety standards, minimize consumer complaints, and perform safely and efficiently before and while electronic brake controls become active. This book, written for students, engineers, forensic experts, and brake technicians, provides readers with theoretical

knowledge of braking physics, and offers numerous illustrations and equations that make the information easy to understand and apply.

New to this edition are expanded chapters on:

- Thermal analysis of automotive brakes
- Analysis of hydraulic brake systems
- Single vehicle braking dynamics

Multiphysics Simulation by Design for Electrical Machines, Power Electronics and Drives - Dr. Marius Rosu 2017-11-20

Presents applied theory and advanced simulation techniques for electric machines and drives This book combines the knowledge of experts from both academia and the software industry to present theories of multiphysics simulation by design for electrical machines, power electronics, and drives. The comprehensive design approach described within supports new applications required by technologies sustaining high drive efficiency. The highlighted framework considers the electric machine at the heart of the entire electric drive. The book also

emphasizes the simulation by design concept—a concept that frames the entire highlighted design methodology, which is described and illustrated by various advanced simulation technologies. Multiphysics Simulation by Design for Electrical Machines, Power Electronics and Drives begins with the basics of electrical machine design and manufacturing tolerances. It also discusses fundamental aspects of the state of the art design process and includes examples from industrial practice. It explains FEM-based analysis techniques for electrical machine design—providing details on how it can be employed in ANSYS Maxwell software. In addition, the book covers advanced magnetic material modeling capabilities employed in numerical computation; thermal analysis; automated optimization for electric machines; and power electronics and drive systems. This valuable resource: Delivers the multi-physics know-how based on practical electric machine design methodologies Provides an extensive

overview of electric machine design optimization and its integration with power electronics and drives Incorporates case studies from industrial practice and research and development projects Multiphysics Simulation by Design for Electrical Machines, Power Electronics and Drives is an incredibly helpful book for design engineers, application and system engineers, and technical professionals. It will also benefit graduate engineering students with a strong interest in electric machines and drives.

**Permanent Magnet Synchronous Machines -**  
Sandra Eriksson 2019-08-20

Interest in permanent magnet synchronous machines (PMSMs) is continuously increasing worldwide, especially with the increased use of renewable energy and the electrification of transports. This book contains the successful submissions of fifteen papers to a Special Issue of Energies on the subject area of “Permanent Magnet Synchronous Machines”. The focus is on permanent magnet synchronous machines and

the electrical systems they are connected to. The presented work represents a wide range of areas. Studies of control systems, both for permanent magnet synchronous machines and for brushless DC motors, are presented and experimentally verified. Design studies of generators for wind power, wave power and hydro power are presented. Finite element method simulations and analytical design methods are used. The presented studies represent several of the different research fields on permanent magnet machines and electric drives.

*ASTIA Subject Headings* - Defense Documentation Center (U.S.) 1959

*2019 IEEE 28th International Symposium on Industrial Electronics (ISIE)* - IEEE Staff  
2019-06-12

The conference will provide a forum for discussions and presentations of advancements in knowledge, new methods and technologies

relevant to industrial electronics, along with their applications and future developments

**Optimal Control Theory** - Donald E. Kirk  
2012-04-26

Upper-level undergraduate text introduces aspects of optimal control theory: dynamic programming, Pontryagin's minimum principle, and numerical techniques for trajectory optimization. Numerous figures, tables. Solution guide available upon request. 1970 edition.

*Salters Horners Advanced Physics* - 2001

The "Salters Horners Advanced Physics" series places physics into social, industrial, environmental and historical contexts, and covers the A Level specifications in place from September 2000. This A2 Level student book features maths support notes and applications-led illustrations of physics.

*Design of an Eddy-current Brake for a Sodium-cooled Nuclear Power Reactor* - R. S. Baker  
1958

## **Mechanical Design and Manufacturing of Electric Motors** - Wei Tong 2022-05-20

This Second Edition of Mechanical Design and Manufacturing of Electric Motors provides in-depth knowledge of design methods and developments of electric motors in the context of rapid increases in energy consumption, and emphasis on environmental protection, alongside new technology in 3D printing, robots, nanotechnology, and digital techniques, and the challenges these pose to the motor industry. From motor classification and design of motor components to model setup and material and bearing selections, this comprehensive text covers the fundamentals of practical design and design-related issues, modeling and simulation, engineering analysis, manufacturing processes, testing procedures, and performance characteristics of electric motors today. This Second Edition adds three brand new chapters on motor breaks, motor sensors, and power transmission and gearing systems. Using a

practical approach, with a focus on innovative design and applications, the book contains a thorough discussion of major components and subsystems, such as rotors, shafts, stators, and frames, alongside various cooling techniques, including natural and forced air, direct- and indirect-liquid, phase change, and other newly-emerged innovative cooling methods. It also analyzes the calculation of motor power losses, motor vibration, and acoustic noise issues, and presents engineering analysis methods and case-study results. While suitable for motor engineers, designers, manufacturers, and end users, the book will also be of interest to maintenance personnel, undergraduate and graduate students, and academic researchers.

**Dynamometer** - Jyotindra S. Killedar  
2012-10-25

It all began way back in 1984 when I began my career in the field of dynamometer and engine testing when after years of gut-feeling and study I realized that there is a need for a book on

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dynamometer and its application to engine testing. As automotive and dynamometer industry is growing worldwide the concern eventually became so great I felt a book devoted to the subject was warranted. The book *Dynamometer-Theory and Application to Engine Testing* is a book dedicated to various dynamometers and how they are applied to engine testing. The book also discusses the essentials of modern test cell and the instrumentation, data acquisition system and other accessories that are employed in modern test cell. After having worked in the field of industrial compressors, pumps, material handling equipment, dynamometer field and software industry I decided to write this book which will help the people working in the automotive industry, engine and vehicle testing, people working in the dynamometer and instrumentation industry and electrical motor industry. The book will be of interest to the students of mechanical and automobile

engineering. The book will be of great value to the incumbents entering in the automotive and dynamometer fields.

**Urban Transportation Abstracts** - 1986

**Electrical Circuit Theory and Technology** -  
John Bird 2003-01-20

*Electrical Circuit Theory and Technology* is a fully comprehensive text for courses in electrical and electronic principles, circuit theory and electrical technology. The coverage takes students from the fundamentals of the subject, to the completion of a first year degree level course. Thus, this book is ideal for students studying engineering for the first time, and is also suitable for pre-degree vocational courses, especially where progression to higher levels of study is likely. John Bird's approach, based on 700 worked examples supported by over 1000 problems (including answers), is ideal for students of a wide range of abilities, and can be worked through at the student's own pace.

Theory is kept to a minimum, placing a firm emphasis on problem-solving skills, and making this a thoroughly practical introduction to these core subjects in the electrical and electronic engineering curriculum. This revised edition includes new material on transients and laplace transforms, with the content carefully matched to typical undergraduate modules. Free Tutor Support Material including full worked solutions to the assessment papers featured in the book will be available at <http://textbooks.elsevier.com/>. Material is only available to lecturers who have adopted the text as an essential purchase. In order to obtain your password to access the material please follow the guidelines in the book.

**Intelligent Embedded Systems** - Daniel Thalmann 2018-02-16

This book is a collection of papers from international experts presented at the International Conference on NextGen Electronic Technologies (ICNETS2). ICNETS2

encompassed six symposia covering all aspects of electronics and communications engineering, including relevant nano/micro materials and devices. Highlighting recent research in intelligent embedded systems, the book is a valuable resource for professionals and students working in the core areas of electronics and their applications, especially in signal processing, embedded systems, and networking. The contents of this volume will be of interest to researchers and professionals alike.

*Electromagnetic Fields in Electrical Engineering* - Andrzej Krawczyk 2002

This volume includes contributions on: field theory and advanced computational electromagnetics; electrical machines and transformers; optimization and interactive design; electromagnetics in materials; coupled field and electromagnetic components in mechatronics; induction heating systems; bioelectromagnetics; and electromagnetics in education.

## **Sensors Fault Diagnosis Trends and Applications** - Piotr Witczak 2021-09-01

Fault diagnosis has always been a concern for industry. In general, diagnosis in complex systems requires the acquisition of information from sensors and the processing and extracting of required features for the classification or identification of faults. Therefore, fault diagnosis of sensors is clearly important as faulty information from a sensor may lead to misleading conclusions about the whole system. As engineering systems grow in size and complexity, it becomes more and more important to diagnose faulty behavior before it can lead to total failure. In the light of above issues, this book is dedicated to trends and applications in modern-sensor fault diagnosis.

## **Axial Flux Permanent Magnet Brushless Machines** - Jacek F. Gieras 2006-01-16

Axial Flux Permanent Magnet (AFPM) brushless machines are modern electrical machines with a lot of advantageous merits over their

conventional counterparts. They are increasingly used in power generation, domestic appliances, industrial drives, electric vehicles, and marine propulsion drives and many other applications. This book deals with the analysis, construction, design, optimisation, control and applications of AFPM machines. The authors present their own research results, as well as significant research contributions made by others. This monograph will be of interest to electrical engineers and other engineers involved in the design and application of AFPM brushless machine drives. It will be an important resource for researchers and graduate students in the field of electrical machine and drives.

## **Handbook of Linear Partial Differential Equations for Engineers and Scientists** -

Andrei D. Polyaniin 2001-11-28

Following in the footsteps of the authors' bestselling Handbook of Integral Equations and Handbook of Exact Solutions for Ordinary Differential Equations, this handbook presents



brief formulations and exact solutions for more than 2,200 equations and problems in science and engineering. Parabolic, hyperbolic, and elliptic equations with

**ASM Ready Reference** - Charles Moosbrugger  
2000

Annotation Provides materials engineers and scientists with a comparative listing of materials and their magnetic and electrical properties to aid in the materials selection process. The materials are sorted by a common materials hierarchy, and their property values are given in a consistent system of International Standard and customary units. The quality of the data and source of the data also are given to enable the user to assess the data. The 36 tables survey volume conductivity at ambient temperature, volume resistivity at high and low temperatures, thermal coefficient of resistivity, superconductors, relative permeability, coercive force, peak induction, residual induction, and curie temperature. No index. Annotation

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**Electric and Magnetic Fields** - R. Belmans  
2012-12-06

This book contains the edited versions of the papers presented at the Second International Workshop on Electric and Magnetic Fields held at the Katholieke Universiteit van Leuven (Belgium) in May 1994. This Workshop deals with numerical solutions of electromagnetic problems in real life applications. The topics include coupled problems (thermal, mechanical, electric circuits), CAD & CAM applications, 3D eddy current and high frequency problems, optimisation and application oriented numerical problems. This workshop was organised jointly by the AIM (Association of Engineers graduated from de Montefiore Electrical Institute) together with the Departments of Electrical Engineering of the Katholieke Universiteit van Leuven (Prof. R. Belmans), the University of Gent (Prof. J. Melkebbek) and the University of Liege (Prof. W. Legros). These laboratories are working

together in the framework of the Pole d'Attraction Interuniversitaire - Inter-University Attractie-Pole 51 - on electromagnetic systems led by the University of Liege and the research work they perform covers most of the topics of the Workshop. One of the principal aims of this Workshop was to provide a bridge between the electromagnetic device designers, mainly industrialists, and the electromagnetic field computation developers. Therefore, this book contains a continuous spectrum of papers from application of electromagnetic models in industrial design to presentation of new theoretical developments.

### **Permanent Magnet Motor Technology -**

Jacek F. Gieras 2009-08-25

The importance of permanent magnet (PM) motor technology and its impact on electromechanical drives has grown exponentially since the publication of the bestselling second edition. The PM brushless motor market has grown considerably faster

than the overall motion control market. This rapid growth makes it essential for electrical and electromechanical engineers and students to stay up-to-date on developments in modern electrical motors and drives, including their control, simulation, and CAD. Reflecting innovations in the development of PM motors for electromechanical drives, Permanent Magnet Motor Technology: Design and Applications, Third Edition demonstrates the construction of PM motor drives and supplies ready-to-implement solutions to common roadblocks along the way. This edition supplies fundamental equations and calculations for determining and evaluating system performance, efficiency, reliability, and cost. It explores modern computer-aided design of PM motors, including the finite element approach, and explains how to select PM motors to meet the specific requirements of electrical drives. The numerous examples, models, and diagrams provided in each chapter facilitate a lucid understanding of

motor operations and characteristics. This 3rd edition of a bestselling reference has been thoroughly revised to include: Chapters on high speed motors and micromotors Advances in permanent magnet motor technology Additional numerical examples and illustrations An increased effort to bridge the gap between theory and industrial applications Modified research results The growing global trend toward energy conservation makes it quite possible that the era of the PM brushless motor drive is just around the corner. This reference book will give engineers, researchers, and graduate-level students the comprehensive understanding required to develop the breakthroughs that will push this exciting technology to the forefront.

### **Advanced Manufacturing and Automation**

**IX** - Yi Wang 2020-01-03

This book presents selected papers from the 9th International Workshop of Advanced Manufacturing and Automation (IWAMA 2019),

held in Plymouth, UK, on November 21-22, 2019. Discussing topics such as novel techniques for manufacturing and automation in Industry 4.0 and smart factories, which are vital for maintaining and improving economic development and quality of life, it offers researchers and industrial engineers insights into implementing the concepts and theories of Industry 4.0, in order to effectively respond to the challenges posed by the 4th industrial revolution and smart factories.

Proceedings of IAC in Budapest 2019 - Group of Authors 2019-08-22

International Academic Conference on Global Education, Teaching and Learning International Academic Conference on Management, Economics, Business and Marketing International Academic Conference on Engineering, Transport, IT and Artificial Intelligence

**Agile Manufacturing Systems** - K Hans Raj 2011-12-17

Agility has become very important for the industries today as the lifetimes of the products are continuously shrinking. This book provides an excellent opportunity for updating understanding of agile methods from the design, manufacturing and business process perspectives, whether one is an industrial practitioner, academic researcher engineer or business graduate student. This volume is a compilation of various important aspects of agility consisting of systemic considerations in manufacturing, agile software systems, agile business systems, agile operations research, flexible manufacturing systems, advanced manufacturing systems with improved materials and mechanical behavior of products, agile aspects of design, clean and green manufacturing systems, environment, agile defence systems.

**Physics on the Move** - Chris Butlin 1996

Built around the common core of physics A Level syllabuses this book, which is one of a series of

eight titles, covers all the compulsory content with the aim of promoting independent learning for post-16 students.

[Handbook of Railway Vehicle Dynamics, Second Edition](#) - Simon Iwnicki 2019-11-14

Handbook of Railway Vehicle Dynamics, Second Edition, provides expanded, fully updated coverage of railway vehicle dynamics. With chapters by international experts, this work surveys the main areas of rolling stock and locomotive dynamics. Through mathematical analysis and numerous practical examples, it builds a deep understanding of the wheel-rail interface, suspension and suspension component design, simulation and testing of electrical and mechanical systems, and interaction with the surrounding infrastructure, and noise and vibration. Topics added in the Second Edition include magnetic levitation, rail vehicle aerodynamics, and advances in traction and braking for full trains and individual vehicles.

**Introduction to Numerical Analysis** - J. Stoer

2013-03-09

On the occasion of this new edition, the text was enlarged by several new sections. Two sections on B-splines and their computation were added to the chapter on spline functions: Due to their special properties, their flexibility, and the availability of well-tested programs for their computation, B-splines play an important role in many applications. Also, the authors followed suggestions by many readers to supplement the chapter on elimination methods with a section dealing with the solution of large sparse systems of linear equations. Even though such systems are usually solved by iterative methods, the realm of elimination methods has been widely extended due to powerful techniques for handling sparse matrices. We will explain some of these techniques in connection with the Cholesky algorithm for solving positive definite linear systems. The chapter on eigenvalue problems was enlarged by a section on the Lanczos algorithm; the sections on the LR and

QR algorithm were rewritten and now contain a description of implicit shift techniques. In order to some extent take into account the progress in the area of ordinary differential equations, a new section on implicit differential equations and differential-algebraic systems was added, and the section on stiff differential equations was updated by describing further methods to solve such equations.

### **Brakes, Brake Control and Driver**

**Assistance Systems** - Konrad Reif 2014-07-18

Braking systems have been continuously developed and improved throughout the last years. Major milestones were the introduction of antilock braking system (ABS) and electronic stability program. This reference book provides a detailed description of braking components and how they interact in electronic braking systems.

2018 5th International Conference on Electric Vehicular Technology (ICEVT) - IEEE Staff  
2018-10-30

## Electric Vehicle Technology

Magnetic Levitation - Hyung-Suk Han

2016-01-02

This book provides a comprehensive overview of magnetic levitation (Maglev) technologies, from fundamental principles through to the state-of-the-art, and describes applications both realised and under development. It includes a history of Maglev science and technology showing the various milestones in its advancement. The core concepts, operating principles and main challenges of Maglev applications attempted across various fields are introduced and discussed. The principle difficulties encountered when applying Maglev technology to different systems, namely air gap control and stabilization, are addressed in detail. The book describes how major advancements in linear motor and magnet technologies have enabled the development of the linear-motor-powered Maglev train, which has a high speed advantage over conventional wheeled trains and has the

potential to reach speed levels achieved by aircraft. However, many expect that Maglev technology to be a green technology that is applied not only in rail transportation, but also in diverse other fields; to ensure clean transfer in LCD manufacturing, in ropeless high speed elevators, small capacity rail transportation, space vehicle launchers, missile testers, energy storage, and so on. These potential applications and their unique challenges and proposed technological solutions are introduced and discussed in depth. The book will provide readers from academia, research institutes and industry with insights on where and how to apply Maglev technology, and will serve as a guide to the realization of their Maglev applications.

**Clutches and Brakes** - William C. Orthwein  
2004-02-18

Conveniently gathering formulas, analytical methods, and graphs for the design and selection of a wide variety of brakes and

clutches in the automotive, aircraft, farming, and manufacturing industries, Clutches and Brakes: Design and Selection, Second Edition simplifies calculations, acquaints engineers with an expansive range of application, and a

**China's High-Speed Rail Technology -**

Youtong Fang 2017-12-15

This book presents cutting-edge theories, techniques, and methodologies in the multidisciplinary field of high-speed railways, sharing the revealing insights of elite scholars from China, the UK and Japan. It demonstrates the achievements that have been made regarding high-speed rail technologies in China from all aspects, while also providing a macro-level comparative study of related technologies in different countries. The book offers a valuable resource for researchers, engineers, industrial practitioners, graduate students, and professionals in the fields of Vehicles, Traction Power Supplies, Materials, and Infrastructure. *Recent Advances in Mechanical Engineering -*

Ivan Tolj 2022-08-18

The book presents the select proceedings of 5th International Conference on Mechanical Engineering (ICOME). ICOME is a series of international conference in mechanical engineering held every two years in Indonesia. The covered topics include aerodynamics and fluid mechanics, air conditioning and cooling system, turbomachinery and alternative fuels, modeling, simulation and optimization, thermodynamics and heat transfer, and combustion system. This book also covers material engineering, composite materials, biomaterials, fatigue and fracture, corrosion, tribology, and biomechanics. Given the contents, the book is useful for students, researchers, and professionals in the area of mechanical engineering and materials.

**Principles of Railway Location and Design -**

Sirong Yi 2017-10-25

Principles of Railway Location and Design examines classification and classing methods of

railway networks and expresses theories and methods of railway route selection and design. Railway networks represent modal transfer, which significantly alleviates traffic congestion and pollution. The book introduces capacity enhancing methods for existing railways and implementation plans and technical conditions for improving existing passenger railways, building new high speed railways and developing heavy haul railways. The book covers ten areas of unfavorable geological conditions including slide areas, debris flow areas and earthquake areas. Practical solutions with detailed presentations have been provided. This valuable reference book summarizes and extracts the high speed railway route selection design. The book covers basic principles and methods by referring to research data of high speed railway technology in China and other countries, as well as engineering practice data. Provides classification and classing methods of railway networks, integrated with principles and

methods of railway route selection and design. Describes enhancing methods for existing railways, and an implementation plan for existing passenger railways, new high speed railways and heavy haul railways. Presents route selection principles and methods for regions with bad geological conditions, including landslide, debris flow and earthquake. Modern Electric, Hybrid Electric, and Fuel Cell Vehicles - Mehrdad Ehsani 2018-02-02 "This book is an introduction to automotive technology, with specific reference to battery electric, hybrid electric, and fuel cell electric vehicles. It could serve electrical engineers who need to know more about automobiles or automotive engineers who need to know about electrical propulsion systems. For example, this reviewer, who is a specialist in electric machinery, could use this book to better understand the automobiles for which the reviewer is designing electric drive motors. An automotive engineer, on the other hand, might



use it to better understand the nature of motors and electric storage systems for application in automobiles, trucks or motorcycles. The early chapters of the book are accessible to technically literate people who need to know something about cars. While the first chapter is historical in nature, the second chapter is a good introduction to automobiles, including dynamics of propulsion and braking. The third chapter discusses, in some detail, spark ignition and compression ignition (Diesel) engines. The fourth chapter discusses the nature of transmission systems.” —James Kirtley, Massachusetts Institute of Technology, USA “The third edition covers extensive topics in modern electric, hybrid electric, and fuel cell vehicles, in which the profound knowledge, mathematical modeling, simulations, and control are clearly presented. Featured with design of various vehicle drivetrains, as well as a multi-objective optimization software, it is an estimable work to meet the needs of automotive

industry.” —Haiyan Henry Zhang, Purdue University, USA “The extensive combined experience of the authors have produced an extensive volume covering a broad range but detailed topics on the principles, design and architectures of Modern Electric, Hybrid Electric, and Fuel Cell Vehicles in a well-structured, clear and concise manner. The volume offers a complete overview of technologies, their selection, integration & control, as well as an interesting Technical Overview of the Toyota Prius. The technical chapters are complemented with example problems and user guides to assist the reader in practical calculations through the use of common scientific computing packages. It will be of interest mainly to research postgraduates working in this field as well as established academic researchers, industrial R&D engineers and allied professionals.” —Christopher Donaghy-Sparg, Durham University, United Kingdom The book deals with the fundamentals,

theoretical bases, and design methodologies of conventional internal combustion engine (ICE) vehicles, electric vehicles (EVs), hybrid electric vehicles (HEVs), and fuel cell vehicles (FCVs). The design methodology is described in mathematical terms, step-by-step, and the topics are approached from the overall drive train system, not just individual components. Furthermore, in explaining the design methodology of each drive train, design examples are presented with simulation results. All the chapters have been updated, and two new chapters on Mild Hybrids and Optimal Sizing and Dimensioning and Control are also included • Chapters updated throughout the text. • New homework problems, solutions, and examples. • Includes two new chapters. • Features accompanying MATLAB™ software.

**Clutches and Brakes** - William C. Orthwein  
2004-02-18

Conveniently gathering formulas, analytical methods, and graphs for the design and

selection of a wide variety of brakes and clutches in the automotive, aircraft, farming, and manufacturing industries, *Clutches and Brakes: Design and Selection, Second Edition* simplifies calculations, acquaints engineers with an expansive range of application, and assists in the selection of parameters for specific design challenges. Contains an abundance of examples, 550 display equations, and more than 200 figures for clear presentation of various design strategies Thoroughly revised throughout, the second edition offers... Additional chapters on friction drives and fluid clutches and retarders An extended discussion on cone brakes and clutches A simpler formulation of the torque from a centrifugal clutch Updated sections on automatic braking systems An analysis of variable-speed friction drives with clutch capability Analytical and computer-assisted design techniques

*Reliability and Safety in Railway* - Xavier Perpinya  
2012-03-30

In railway applications, performance studies are fundamental to increase the lifetime of railway systems. One of their main goals is verifying whether their working conditions are reliable and safety. This task not only takes into account the analysis of the whole traction chain, but also requires ensuring that the railway infrastructure is properly working. Therefore, several tests for detecting any dysfunctions on their proper operation have been developed. This book covers this topic, introducing the reader to railway traction fundamentals, providing some ideas on safety and reliability issues, and experimental approaches to detect any of these dysfunctions. The objective of the book is to serve as a valuable reference for students, educators, scientists, faculty members, researchers, and engineers.

[Design and Control of Hybrid Brake-by-Wire System for Autonomous Vehicle](#) - Donghai Hu  
2022-01-22

This book establishes the models of the electric

motor, the hydraulic compound brake system, and the electromagnetic and friction integrated brake system. Considering the two principles on safety and energy saving, it proposes a hybrid brake-by-wire system optimization design method and proposes the optimization method of braking force distribution in different braking modes. The methodology of the book is by using the common Lyapunov function to analyze the stability of the braking mode switching process and designs the braking mode switching controller of the hybrid braking system. The selection of materials provides readers with some guidance in the future design and control of hybrid drive-by-wire systems for autonomous vehicles

**Nonlinear Electromagnetic Systems** - A. J. Moses 1996

The book covers classical and practical approaches to electromagnetic field solutions in magnetic devices. The following topics are addressed: Advanced computational techniques;

Intelligent computer aided design; Magnetic materials; Inverse problems; Magnetic sensors and transducers; Performance and optimisation of devices; Applications to electronic systems; Modelling of non-linear systems and other related topics. This volume presents 200 of the best articles presented at the International Symposium on Non-Linear Electromagnetic Systems (ISEM in Cardiff, Wales). The previous ISEM papers were published in the successful volume *Advanced Computational and Design Techniques in Applied Electromagnetic Systems* (by Elsevier). Main chapters in this book are: Electromagnetic Devices: Non-linearities at contacts and interfaces in semiconductor

structures by R.H. Williams as key-note. Optimisation, Inverse and Biological Studies: Power loss testing; intelligent computation of optimization of metal cutting; grid methods for CFD and CEM. Magnetic Materials: Materials for circuit simulator applications; rotational magnetostriction. Computational Techniques and Modelling: Electromagnetic device design; soft magnetic materials; engineering application of artificial intelligence. Sensors and Non-destructive Testing: Eddy current nondestructive evaluation; nonlinear magnetoresistance; micro magnetic sensor. Electronic and Electrical Applications: Non-linear transistor parameters; superconducting magnets.