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International Conference for Innovation in Biomedical Engineering and Life Sciences
An Introduction to Mechanical Engineering
The New Frontiers of Space
Soil Mechanics Fundamentals
Pile Design and Construction Practice
Driving-safety Systems
Advances in Simulation, Product Design and Development
Electromagnetic Theory of Gratings
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An Introduction to Mechanical Engineering

The book covers many classical topics in elementary algebra, including factoring, quadratic functions, irrational expressions, Vieta's relations, equations and systems of equations, inequalities, sums and products, and polynomials. Expanding upon the previous work in the series, *105 Problems in Algebra* from the AwesomeMath Summer Program, this book features additional more advanced topics, including exponents and logarithms, complex numbers, and trigonometry. The special section on trigonometric substitutions and more explores seemingly algebraic problems with natural geometric and trigonometric interpretations. To give the reader practice with the strategies and techniques discussed in each of the chapters, we have included 108 diverse problems, of which 54 are introductory and 54 are advanced. Solutions to all of these problems are provided, in which different approaches are compared.

The New Frontiers of Space

This text is intended for the student who is being

introduced for the first time to the Finite Element Method (FEM). Written in a simple, easy to follow manner, the book is a practical guide for learning the basics of the method and applying them to a wide variety of problems. The book focuses on the practical applications of fundamental concepts, with special emphasis on fluid mechanics. Computational experiments are integrated throughout the text via example problems and exercises. A comprehensive finite element instructional computer code, written for the PC using standard FORTRAN 77, is used to support every basic step and solve the set of example problems. The coverage of numerical linear algebra presents a unique numerical scheme based on continuing finite element/finite difference methodologies.

Soil Mechanics Fundamentals

Describes the history of the Web server platform and covers downloading and compiling, configuring and running the program on UNIX, writing specialized modules, and establishing security routines.

Pile Design and Construction Practice

This monograph, written from a numerical analysis perspective, aims to provide a comprehensive treatment of both the mathematical framework and the numerical methods for flexible multibody dynamics. Not only is this field permanently and rapidly growing, with various applications in aerospace engineering, biomechanics, robotics, and

vehicle analysis, its foundations can also be built on reasonably established mathematical models. Regarding actual computations, great strides have been made over the last two decades, as sophisticated software packages are now capable of simulating highly complex structures with rigid and deformable components. The approach used in this book should benefit graduate students and scientists working in computational mechanics and related disciplines as well as those interested in time-dependent partial differential equations and heterogeneous problems with multiple time scales. Additionally, a number of open issues at the frontiers of research are addressed by taking a differential-algebraic approach and extending it to the notion of transient saddle point problems.

Driving-safety Systems

An Introduction to Mechanical Engineering: Part 2 is an essential text for all second-year undergraduate students as well as those studying foundation degrees and HNDs. The text provides thorough coverage of the following core engineering topics: Fluid dynamics Thermodynamics Solid mechanics Control theory and techniques Mechanical power, loads and transmissions Structural vibration As well as mechanical engineers, the text will be highly relevant to automotive, aeronautical/aerospace and general engineering students. The material in this book has full student and lecturer support on an accompanying website at <http://cw.tandf.co.uk/mechanicalengineering/>, which

includes: worked solutions for exam-style questions
multiple-choice self-assessment revision material
The text is written by an experienced team of lecturers at the internationally renowned University of Nottingham.

Advances in Simulation, Product Design and Development

There are few industries in today's world as dynamic and dramatically changing as the space sector, with new ventures and initiatives being announced on a daily basis. As well as emerging countries improving their launching and manufacturing capabilities, private actors are beginning to join public bodies in the space race, and participating in what is frequently being referred to as the new space era. With fantastic opportunities arising for business and economics, this book provides a comprehensive overview of the space sector, exploring recent initiatives, and the most important areas of investment in the industry, including emerging fields of activities such as asteroid mining and space tourism. It also addresses traditional and non-traditional security issues in the sector, together with discussing their legal implications. This interdisciplinary book provides insights for practitioners and researchers alike, particularly those involved in technology and innovation management, emerging markets, international relations, and security studies.

Electromagnetic Theory of Gratings

This unique handbook assumes no starting knowledge of car electrical and electronics systems. It begins with simple circuits and finishes with complex electronic systems that include engine management, transmission control and stability control systems. If you want to diagnose a simple alternator charging or headlight problem, this book is for you. But if you also want to fix complex electronic systems using On-Board Diagnostics, a multimeter or oscilloscope, this book also shows you how to do that. Is it best to use a series or parallel circuit when adding a horn? How do you use a multimeter to check a coolant temperature sensor against its specs? How can you add an electronic timer that will keep your headlights on as you walk to your door? When should you buy an oscilloscope – and how complex an instrument do you really need? The author has been writing about car electronic systems for over 25 years. He is also an experienced and proficient car modifier who has performed numerous electronic modifications and upgrades to his own cars, including world-first modifications. If you want a practical, hands-on book that demystifies and explains car electrical and electronic systems, this is the book for you.

Newnes Electrical Power Engineer's Handbook

This book is a compilation of selected papers from the 3rd International Petroleum and Petrochemical Technology Conference (IPPTC 2019). The work focuses on petroleum & petrochemical technologies and practical challenges in the field. It creates a

platform to bridge the knowledge gap between China and the world. The conference not only provides a platform to exchanges experience but also promotes the development of scientific research in petroleum & petrochemical technologies. The book will benefit a broad readership, including industry experts, researchers, educators, senior engineers and managers.

Neural and Adaptive Systems

This international handbook is essential for geotechnical engineers and engineering geologists responsible for designing and constructing piled foundations. It explains general principles and practice and details current types of pile, piling equipment and methods. It includes calculations of the resistance of piles to compressive loads, pile group

Light Propagation in Periodic Media

As the field of environmental management moves into the future, its focus will be on reducing or eliminating waste pollution streams. Engineers, technicians, and maintenance personnel must develop proficiency and improved understanding of pollution prevention and waste control to cope with the challenges of this important area. Pollution Prevention

China Dream, Space Dream

This practical resource introduces electrical and electronic principles and technology covering theory through detailed examples, enabling students to develop a sound understanding of the knowledge required by technicians in fields such as electrical engineering, electronics and telecommunications. No previous background in engineering is assumed, making this an ideal text for vocational courses at Levels 2 and 3, foundation degrees and introductory courses for undergraduates.

Sustainable Practices for Landfill Design and Operation

Publisher description

Art of Digital Audio

This volumes presents the proceedings of ICIBEL 2015, organized by the Centre for Innovation in Medical Engineering (CIME) under Innovative Technology Research Cluster, University of Malaya. It was held in Kuala Lumpur, Malaysia, from 6-8 December 2015. The ICIBEL 2015 conference promotes the latest researches and developments related to the integration of the Engineering technology in medical fields and life sciences. This includes the latest innovations, research trends and concerns, challenges and adopted solution in the field of medical engineering and life sciences.

Petroleum Reservoir Rock and Fluid Properties

Develop New Insight into the Behavior of Adaptive Systems This one-of-a-kind interactive book and CD-ROM will help you develop a better understanding of the behavior of adaptive systems. Developed as part of a project aimed at innovating the teaching of adaptive systems in science and engineering, it unifies the concepts of neural networks and adaptive filters into a common framework. It begins by explaining the fundamentals of adaptive linear regression and builds on these concepts to explore pattern classification, function approximation, feature extraction, and time-series modeling/prediction. The text is integrated with the industry standard neural network/adaptive system simulator NeuroSolutions. This allows the authors to demonstrate and reinforce key concepts using over 200 interactive examples. Each of these examples is 'live,' allowing the user to change parameters and experiment first-hand with real-world adaptive systems. This creates a powerful environment for learning through both visualization and experimentation. Key Features of the Text * The text and CD combine to become an interactive learning tool. * Emphasis is on understanding the behavior of adaptive systems rather than mathematical derivations. * Each key concept is followed by an interactive example. * Over 200 fully functional simulations of adaptive systems are included. * The text and CD offer a unified view of neural networks, adaptive filters, pattern recognition, and support vector machines. * Hyperlinks allow instant access to keyword definitions, bibliographic references, equations, and advanced discussions of concepts. The CD-ROM Contains: * A complete,

electronic version of the text in hypertext format * NeuroSolutions, an industry standard, icon-based neural network/adaptive system simulator * A tutorial on how to use NeuroSolutions * Additional data files to use with the simulator "An innovative approach to describing neurocomputing and adaptive learning systems from a perspective which unifies classical linear adaptive systems approaches with the modern advances in neural networks. It is rich in examples and practical insight." -James Zeidler, University of California, San Diego

Magnetic Bearings

An accessible, clear, concise, and contemporary course in geotechnical engineering, this key text: strikes a balance between theory and practical applications for an introductory course in soil mechanics keeps mechanics to a minimum for the students to appreciate the background, assumptions and limitations of the theories discusses implications of the key ideas to provide students with an understanding of the context for their application gives a modern explanation of soil behaviour is presented particularly in soil settlement and soil strength offers substantial on-line resources to support teaching and learning

Radiation Hydrodynamics

"Published by OpenStax College, Calculus is designed for the typical two- or three-semester general calculus course, incorporating innovative features to enhance

student learning. The book guides students through the core concepts of calculus and helps them understand how those concepts apply to their lives and the world around them. Due to the comprehensive nature of the material, we are offering the book in three volumes for flexibility and efficiency. Volume 1 covers functions, limits, derivatives, and integration."--BC Campus website.

Timing Belt Replacement Guide

A strong foundation in reservoir rock and fluid properties is the backbone of almost all the activities in the petroleum industry. Petroleum Reservoir Rock and Fluid Properties offers a reliable representation of fundamental concepts and practical aspects that encompass this vast subject area. The book provides up-to-date coverage of vari

Orange Soap

Described as "the most comprehensive book on digital audio to date", it is widely acclaimed as an industry "bible". Covering the very latest developments in digital audio technology, it provides an thorough introduction to the theory as well as acting as an authoritative and comprehensive professional reference source. Everything you need is here from the fundamental principles to the latest applications, written in an award-winning style with clear explanations from first principles. New material covered includes internet audio, PC audio technology, DVD, MPEG audio compression, digital audio

broadcasting and audio networks. Whether you are in the field of audio engineering, sound recording, music technology, broadcasting and communications media or audio design and installation, this book has it all. Written by a leading international audio specialist, who conducts professional seminars and workshops around the world, the book has been road tested for many years by professional seminar attendees and students to ensure their needs are taken into account, and all the right information is covered. This new edition now includes: Internet audio PC Audio technology DVD MPEG Audio compression Digital Audio Broadcasting Audio networks Digital audio professionals will find everything they need here, from the fundamental principles to the latest applications, written in an award-winning style with clear explanations from first principles. John Watkinson is an international consultant in audio, video and data recording. He is a Fellow of the AES, a member of the British Computer Society and a chartered information systems practitioner. He presents lectures, seminars, conference papers and training courses worldwide. He is the author of many other Focal Press books, including: the Kraszna-Krausz award winning MPEG-2; The Art of Digital Audio; An Introduction to Digital Video; The Art of Sound Reproduction; An Introduction to Digital Audio; TV Fundamentals and Audio for Television. He is also co-author, with Francis Rumsey, of The Digital Interface Handbook, and contributor to the Loudspeaker and Headphone Handbook, 3rd edition.

A TEXTBOOK OF CHEMICAL ENGINEERING

THERMODYNAMICS

"This book is designed to help students organize their thinking about psychology at a conceptual level. The focus on behaviour and empiricism has produced a text that is better organized, has fewer chapters, and is somewhat shorter than many of the leading books. The beginning of each section includes learning objectives; throughout the body of each section are key terms in bold followed by their definitions in italics; key takeaways, and exercises and critical thinking activities end each section"--BCcampus website.

Modern Antenna Design

This Second Edition for the standard graduate level course in conduction heat transfer has been updated and oriented more to engineering applications partnered with real-world examples. New features include: numerous grid generation--for finding solutions by the finite element method--and recently developed inverse heat conduction. Every chapter and reference has been updated and new exercise problems replace the old.

Advances in Harmony Search, Soft Computing and Applications

Updated to reflect the latest technology in the automotive industry, this book will provide the knowledge and skills needed to successfully inspect, maintain, and repair vehicles of all makes and

models. Automotive Service: Inspection, Maintenance, and Repair, 3E begins by introducing readers to a number of automotive career options, shop management basics, plus necessary tools and equipment. The book then progresses to the theories of vehicle systems operations and includes step-by-step procedures for troubleshooting and repairing all major systems of the modern automobile. Updates include coverage of new vehicle technology like EVAP systems, on-board diagnostics and emissions, alternative fuels, and hybrid vehicles, making this book not only comprehensive but also current so that readers can feel confident they are learning the very latest in industry trends and techniques.

Computational Flexible Multibody Dynamics

This book discusses various aspects of real-world applications of optimization algorithms, presenting insights from the 5th International Conference on Harmony Search, Soft Computing and Applications, held at Kunming, China on July 20–22, 2019. The book focuses on the recent advances in soft computing techniques such as harmony search, PSO and DE and their application to solve engineering problems. Presenting research on various real-world engineering problems concerning crowd evacuation strategies, adaptive learning systems, economic impact analysis, cyber-attack detection, urban drainage systems, water management models, feature selection and inventory systems, it is a valuable resource for researchers wanting a state-of-the-art overview of the

latest advances in soft computing and related areas.

Astronomical Image and Data Analysis

The second edition of this popular engineering reference book, previously titled *Newnes Electrical Engineer's Handbook*, provides a basic understanding of the underlying theory and operation of the major classes of electrical equipment. With coverage including the key principles of electrical engineering and the design and operation of electrical equipment, the book uses clear descriptions and logical presentation of data to explain electrical power and its applications. Each chapter is written by leading professionals and academics, and many sections conclude with a summary of key standards. The new edition is updated in line with recent advances in EMC, power quality and the structure and operation of power systems, making *Newnes Electrical Power Engineer's Handbook* an invaluable guide for today's electrical power engineer.

- A unique, concise reference book with contributions from eminent professionals in the field
- Provides straightforward and practical explanations, plus key information needed by engineers on a day-to-day basis
- Includes a summary of key standards at the end of each chapter

Automotive Service

Designed as an undergraduate-level textbook in Chemical Engineering, this student-friendly, thoroughly class-room tested book, now in its second

edition, continues to provide an in-depth analysis of chemical engineering thermodynamics. The book has been so organized that it gives comprehensive coverage of basic concepts and applications of the laws of thermodynamics in the initial chapters, while the later chapters focus at length on important areas of study falling under the realm of chemical thermodynamics. The reader is thus introduced to a thorough analysis of the fundamental laws of thermodynamics as well as their applications to practical situations. This is followed by a detailed discussion on relationships among thermodynamic properties and an exhaustive treatment on the thermodynamic properties of solutions. The role of phase equilibrium thermodynamics in design, analysis, and operation of chemical separation methods is also deftly dealt with. Finally, the chemical reaction equilibria are skillfully explained. Besides numerous illustrations, the book contains over 200 worked examples, over 400 exercise problems (all with answers) and several objective-type questions, which enable students to gain an in-depth understanding of the concepts and theory discussed. The book will also be a useful text for students pursuing courses in chemical engineering-related branches such as polymer engineering, petroleum engineering, and safety and environmental engineering. New to This Edition • More Example Problems and Exercise Questions in each chapter • Updated section on Vapour-Liquid Equilibrium in Chapter 8 to highlight the significance of equations of state approach • GATE Questions up to 2012 with answers

Trajectory Planning for Automatic Machines and Robots

A practical book written for engineers who design and use antennas. The author has many years of hands-on experience designing antennas that were used in such applications as the Venus and Mars missions of NASA. The book covers all important topics of modern antenna design for communications. Numerical methods will be included but only as much as are needed for practical applications.

Apache

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.

Introduction to Psychology

This volume comprises select proceedings of the 7th International and 28th All India Manufacturing Technology, Design and Research conference 2018 (AIMTDR 2018). The papers in this volume discuss simulations based on techniques such as finite element method (FEM) as well as soft computing based techniques such as artificial neural network (ANN), their optimization and the development and design of mechanical products. This volume will be of interest to researchers, policy makers, and practicing engineers alike.

Grouping Multidimensional Data

Solid waste management is a global concern, and landfilling remains the predominant management method in most areas of the world. This book provides a comprehensive view of state-of-the-art methods to manage landfills more sustainably, drawing upon more than two decades of research, design, and operational experiences at operating sites across the

world. Sustainable landfills implement one or multiple technologies to control and enhance the degradation of waste materials to realize a multitude of potential benefits during or shortly after the landfill's operating phase. This book presents detailed approaches in the development, design, operation, and monitoring of sustainable landfills. Case studies showcasing the benefits and challenges of sustainable landfill technologies are also provided to give the reader additional context. The intent of the book is to serve as a reference guide for regulatory personnel, a practical tool for designers and engineers to build on for site-specific applications of sustainable landfill technologies, and a comprehensive resource for researchers who are continuing to explore new and better ways to more sustainably manage waste materials.

108 Algebra Problems from the Awesomemath Year-Round Program

Formerly 'Automotive Brake Systems'. 2nd Edition. Safety is very important in vehicle design and operation. Driving-Safety Systems is the new edition of what was formerly titled 'Automotive Brake Systems'. The title has been changed to reflect the addition of information on recent technological advancements in safety systems beyond braking systems such as traction control systems (TCS) and electronic stability control (ESP). Ideal for engineers, technicians and enthusiasts, this book offers a wide range of detailed and easy-to-understand descriptions of the most important control systems and

components. A new section on electronic stability has been added, and sections on driving physics, braking systems basics and braking systems for passenger cars and commercial vehicles have been updated. Contents include: Driving Safety in the Vehicle Basics of Driving Physics Braking-System Basics Braking Systems for Passenger Cars Commercial Vehicles - Basic Concepts, Systems and Diagrams Compressed Air Equipment Symbols Equipment for Commercial Vehicles Brake Testing Electronic Stability Program ESP.

Electrical Circuit Theory and Technology

This reference book provides a comprehensive insight into today's diesel injection systems and electronic control. It focuses 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.

Proceedings of the International Petroleum and Petrochemical Technology Conference 2019

Finite Elements 1-2-3

Based on more than 30 years of research on differential theories of gratings, this book describes

developments in differential theory for applications in spectroscopy, acoustics, X-ray instrumentation, optical communication, information processing, photolithography, high-power lasers, high-precision engineering, and astronomy. Introducing the Fast Fourier Factorization approach to improve the convergence of a truncated series, the book examines multilayers, stacked gratings, crossed gratings, photonic crystals, and isotropic and anisotropic materials; techniques and examples in grating design; and Maxwell equations in a truncated Fourier space.

Electrical and Electronic Principles and Technology

This broad and up-to-date treatment provides an accessible introduction to the theory and the large-scale simulation methods currently used in radiation hydrodynamics. Chapters cover all the central topics, including: a review of the fundamentals of gas dynamics; methods for computational fluid dynamics; theory of radiative transfer and of the dynamical coupling of matter and radiation; and quantum mechanics of matter-radiation interaction. Also covered are the details of spectral line formation out of thermodynamic equilibrium; the theory of refraction and transfer of polarised light and current computational methods for radiation transport, and a description of some notable applications of the theory in astrophysics and laboratory plasmas. This is a valuable text for research scientists and graduate students in physics and astrophysics.

Calculus

China's position in the world has been evolving. It seeks increased influence and independence from foreign powers with the ultimate goal of preserving China's sovereignty, independence, territorial integrity, and political system. Over the long term, China seeks to transform the international system to better suit its interests, but seeks to integrate itself into the existing international system over the short term with the goal of reshaping the Asia-Pacific political environment into one in which its interests must be given greater attention. China's pursuit of space power is intended to support this strategy. China views the development of space power as a necessary move for a country that wants to strengthen its national power. Indeed, China's goal is to become a space power on par with the United States and to foster a space industry that is the equal of those in the United States, Europe, and Russia. China takes a comprehensive, long-term approach to this goal that emphasizes the accrual of the military, economic, and political benefits space can provide.

Pollution Prevention

When I was a student, in the early fifties, the properties of gratings were generally explained according to the scalar theory of optics. The grating formula (which predicts the diffraction angles for a given angle of incidence) was established, experimentally verified, and intensively used as a source for textbook problems. Indeed those grating

properties, we can call optical properties, were taught in a satisfactory manner and the students were able to clearly understand the diffraction and dispersion of light by gratings. On the other hand, little was said about the "energy properties", i. e. , about the prediction of efficiencies. Of course, the existence of the blaze effect was pointed out, but very frequently nothing else was taught about the efficiency curves. At most a good student had to know that, for an echellette grating, the efficiency in a given order can approach unity insofar as the diffracted wave vector can be deduced from the incident one by a specular reflexion on the large facet. Actually this rule of thumb was generally sufficient to make good use of the optical gratings available about thirty years ago. Thanks to the spectacular improvements in grating manufacture after the end of the second world war, it became possible to obtain very good gratings with more and more lines per mm. Nowadays, in gratings used in the visible region, a spacing smaller than half a micron is common.

Heat Conduction

This book is a printed edition of the Special Issue "Wearable Electronics and Embedded Computing Systems for Biomedical Applications" that was published in Electronics

Diesel Engine Management

This book deals with the problems related to planning

motion laws and trajectories for the actuation system of automatic machines, in particular for those based on electric drives, and robots. The problem of planning suitable trajectories is relevant not only for the proper use of these machines, in order to avoid undesired effects such as vibrations or even damages on the mechanical structure, but also in some phases of their design and in the choice and sizing of the actuators. This is particularly true now that the concept of “electronic cams” has replaced, in the design of automatic machines, the classical approach based on “mechanical cams”. The choice of a particular trajectory has direct and relevant implications on several aspects of the design and use of an automatic machine, like the dimensioning of the actuators and of the reduction gears, the vibrations and efforts generated on the machine and on the load, the tracking errors during the motion execution. For these reasons, in order to understand and appreciate the peculiarities of the different techniques available for trajectory planning, besides the mathematical aspects of their implementation also a detailed analysis in the time and frequency domains, a comparison of their main properties under different points of view, and general considerations related to their practical use are reported.

Wearable Electronics and Embedded Computing Systems for Biomedical Applications

With information and scale as central themes, this comprehensive survey explains how to handle real

problems in astronomical data analysis using a modern arsenal of powerful techniques. It treats those innovative methods of image, signal, and data processing that are proving to be both effective and widely relevant. The authors are leaders in this rapidly developing field and draw upon decades of experience. They have been playing leading roles in international projects such as the Virtual Observatory and the Grid. The book addresses not only students and professional astronomers and astrophysicists, but also serious amateur astronomers and specialists in earth observation, medical imaging, and data mining. The coverage includes chapters or appendices on: detection and filtering; image compression; multichannel, multiscale, and catalog data analytical methods; wavelets transforms, Picard iteration, and software tools. This second edition of Starck and Murtagh's highly appreciated reference again deals with topics that are at or beyond the state of the art. It presents material which is more algorithmically oriented than most alternatives and broaches new areas like ridgelet and curvelet transforms. Throughout the book various additions and updates have been made.

Car Electrical & Electronic Systems

Compiling the expertise of nine pioneers of the field, *Magnetic Bearings - Theory, Design, and Application to Rotating Machinery* offers an encyclopedic study of this rapidly emerging field with a balanced blend of commercial and academic perspectives. Every element of the technology is examined in detail,

beginning at the component level and proceeding through a thorough exposition of the design and performance of these systems. The book is organized in a logical fashion, starting with an overview of the technology and a survey of the range of applications. A background chapter then explains the central concepts of active magnetic bearings while avoiding a morass of technical details. From here, the reader continues to a meticulous, state-of-the-art exposition of the component technologies and the manner in which they are assembled to form the AMB/rotor system. These system models and performance objectives are then tied together through extensive discussions of control methods for both rigid and flexible rotors, including consideration of the problem of system dynamics identification. Supporting this, the issues of system reliability and fault management are discussed from several useful and complementary perspectives. At the end of the book, numerous special concepts and systems, including micro-scale bearings, self-bearing motors, and self-sensing bearings, are put forth as promising directions for new research and development. Newcomers to the field will find the material highly accessible while veteran practitioners will be impressed by the level of technical detail that emerges from a combination of sophisticated analysis and insights gleaned from many collective years of practical experience. An exhaustive, self-contained text on active magnetic bearing technology, this book should be a core reference for anyone seeking to understand or develop systems using magnetic bearings.

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