

5S Innovation Model



v pevné vazbě, 104 stran
vyd. Taylor & Francis Ltd, II/2024
ISBN 9781032622675

katalog.cena 2.200 Kč
v této nabídce **1.650 Kč**

This book is aimed to help us look into the future of mining by defining ultimate operational conditions that will be present in a typical mining operation regardless of how far in the future. It introduces an innovation strategy designed to identify current and future technologies to achieve specific ultimate operational conditions that will be present in 'the mine of the future'. The mining innovation strategy presented here is the result of several innovation projects where the author had the opportunity to assist and had successfully implemented it at several mining companies and mining research institutions around the world, including Australia, South Africa, the United States, Canada, Peru, and Mexico.

This innovation strategy is designed to be consistent with any type of mining method as well as any commodity being mined, such as metal or nonmetal mining, soft-rock or hard-rock mining, underground or surface mining. The five ultimate mining operational conditions or drivers discussed in this book were carefully defined considering current operational and technology trends, which will keep any mining company competitive during the following decades. The mining innovation strategy thus considers five ultimate operational conditions or drivers (1) Achieving maximum safety, (2) simplifying systems, (3) using smart-intelligent systems, (4) designing stealth operations, and (5) sustainable use of environmental and human resources within the operation.

Advanced IoT Technologies and Applications in Industry 4.0 Digital Economy



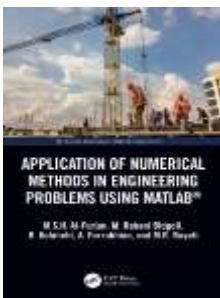
v pevné vazbě, 394 stran
vyd. Taylor & Francis Ltd, II/2024
ISBN 9781032552040

katalog. cena 3.100 Kč
v této nabídce **2.320 Kč**

The application of internet of things (IoT) technologies and artificial intelligence (AI)-enabled IoT solutions has gradually become accepted by business and production organizations as an effective tool for automating several activities effectively and efficiently and developing and distributing products to the global market. Within this book, the reader will learn how to implement IoT devices, IoT-equipped machines, and AI-equipped IoT applications using models and methodologies along with an array of case studies. Advanced IoT Technologies and Applications in the Industry 4.0 Digital Economy covers the basics of IoT-equipped machines in developing and managing various activities in many industries.

It discusses all of the key points of an AI-enabled IoT solution, which includes predictive analytics, robotic process automation, predictive maintenance, automated processes, IoT technologies and IoT-equipped sensors related to machines and processes, production testing systems, and product assessment processes in the production environment. The book presents the concepts and interactive methods using datasets, processing workflow charts, and architectural diagrams along with additional real-time systems for easy and fast understanding of the application of IoT-equipped machines and AI-enabled solutions in organizations and includes many case studies throughout the book to enforce reader comprehension.

Application of Numerical Methods in Engineering Problems using MATLAB®



v pevné vazbě, 278 stran
vyd. Taylor & Francis Ltd, I/2024
ISBN 9781032393919

katalog.cena 2.660 Kč
v této nabídce **1.980 Kč**

Application of Numerical Methods in Engineering Problems Using MATLAB® presents an analysis of structures using numerical methods and mathematical modeling. This structural analysis also includes beam, plate, and pipe elements, and examines deflection and frequency or buckling loads. The various engineering theories of beams/plates/shells are comprehensively presented, and the relationships between stress and strain, and the governing equations of the structure are extracted.

To solve governing equations with numerical methods, there are two general types, including methods based on derivatives or integrals. Derivative-based methods have the advantage of flexibility in modeling boundary conditions, low analysis time, and a very high degree of accuracy. Therefore, the book explains numerical methods based on derivatives, especially the differential quadrature method.

Features: Examines the application of numerical methods to obtain the deflection, frequency, and buckling loads. Discusses the application of numerical methods for solving motion equations. Includes numerous practical and applicable examples throughout.

Circular and Transformative Economy



v pevné vazbě, 280 stran
vyd. Taylor & Francis Ltd, II/2024
ISBN 9781032356013

katalog.cena 2.200 Kč
v této nabídce **1.650 Kč**

The main aim of this book is to illustrate circular models for sustainable resource management. It highlights the benefits of transformative approaches in integrating, simplifying, and facilitating understanding of complex systems and transforming systems towards greater sustainability while achieving multiple social, economic, and environmental outcomes. It provides pathways towards strategic policy decisions on socio-economic transformation supported by case studies.

Features: Discusses exploration of a transitional path to the circular economy, explored from the point of view of waste and technology. Explains transformational change towards sustainable socio-ecological interactions. Reviews provision of pathways towards sustainability through scenario development.

Provides assessment of progress towards Sustainable Development Goals. Presents cross-sectoral and multicentric approaches towards circularity. This book is aimed at researchers and professionals in water and environmental engineering, circular economy, sustainability, and environmental studies

Computational Methods in Engineering



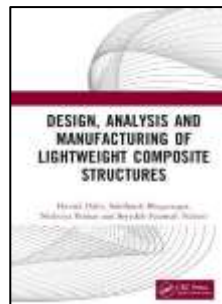
v pevné vazbě, 570 stran
vyd. Taylor & Francis Ltd, III/2024
ISBN 9781032466378

katalog.cena 3.840 Kč
v této nabídce **2.870 Kč**

Computational Methods in Engineering: Finite Difference, Finite Volume, Finite Element, and Dual Mesh Control Domain Methods provides readers with the information necessary to choose appropriate numerical methods to solve a variety of engineering problems. Explaining common numerical methods in an accessible yet rigorous manner, the book details the finite element method (FEM), finite volume method (FVM) and importantly, a new numerical approach, dual mesh control domain method (DMCDM). Numerical methods are crucial to everyday engineering.

The book begins by introducing the various methods and their applications, with example problems from a range of engineering disciplines including heat transfer, solid and structural mechanics, and fluid mechanics. It highlights the strengths of FEM, with its systematic procedure and modular steps, and then goes on to explain the uses of FVM. It explains how DMCDM embodies useful parts of both FEM and FVM, particularly in its use of the control domain method and how it can provide a comprehensive computational approach.

Design, Analysis and Manufacturing of Lightweight Composite Structures



v pevné vazbě, 200 stran
vyd. Taylor & Francis Ltd, II/2024
ISBN 9781032551401

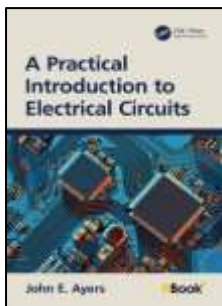
katalog.cena 2.510 Kč
v této nabídce **1.870 Kč**

Design, Analysis, and Manufacturing of Lightweight Composite Structures provides a thorough guide to composite materials and their applications, suitable for students of all levels, as well as those in the industry. Covering established theory as well as cutting-edge developments in the field, this book is an essential companion to anyone interested in composite materials. Discussing the mechanical properties of advanced composites and their materials, this book describes testing and evaluation, focusing on sustainability in manufacturing.

Looking at how composite materials can form structural components, this book is centered around how to design and analyze these materials as appropriate to different applications. It discusses micromechanics, stiffness matrices, and numerical calculations using MATLAB, Excel, and Python. It also covers failure, applied forces, strain, and stress, alongside finite element analysis of composites.

This book is suitable for students and researchers in the field of composites, mechanical design, micromechanics, mechanics of solids, and material science. It also has relevance to the automotive industry.

Practical Introduction to Electrical Circuits



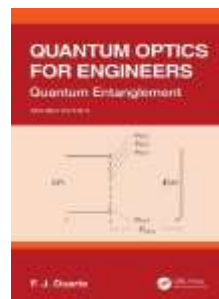
v měkké vazbě, 430 stran
vyd. Taylor & Francis Ltd, II/2024
ISBN 9781032528168

katalog.cena 1.330 Kč
v této nabídce **990 Kč**

A Practical Introduction to Electrical Circuits represents a fresh approach to the subject which is compact and easy to use, yet offers a comprehensive description of the fundamentals, including Kirchhoff's laws, nodal and mesh analysis, Thevenin and Norton's theorems, and maximum power transfer for both DC and AC circuits, as well as transient analysis of first- and second-order circuits. Advanced topics such as mutual inductance and transformers, operational amplifier circuits, sequential switching, and three-phase systems reinforce the fundamentals. Approximately one hundred solved examples are included within the printed copy.

Extra features online include over two hundred additional problems with detailed, step-by-step solutions, and 40 self-service quizzes with solutions and feedback.

Quantum Optics for Engineers



v pevné vazbě, 404 stran
vyd. Taylor & Francis Ltd, II/2024
ISBN 9781032499345

katalog.cena 3.550 Kč
v této nabídce **2.650 Kč**

The second edition of Quantum Optics for Engineers: Quantum Entanglement is an updated and extended version of its first edition. New features include a transparent interferometric derivation of the physics for quantum entanglement devoid of mysteries and paradoxes. It also provides a utilitarian matrix version of quantum entanglement apt for engineering applications.

Features: Introduces quantum entanglement via the Dirac–Feynman interferometric principle, free of paradoxes. Provides a practical matrix version of quantum entanglement which is highly utilitarian and useful for engineers. Focuses on the physics relevant to quantum entanglement and is coherently and consistently presented via Dirac's notation.

Illustrates the interferometric quantum origin of fundamental optical principles such as diffraction, refraction, and reflection. Emphasizes mathematical transparency and extends on a pragmatic interpretation of quantum mechanics. This book is written for advanced physics and engineering students, practicing engineers, and scientists seeking a workable-practical introduction to quantum optics and quantum entanglement.

Robotics and Automation in Industry 4.0



v pevné vazbě, 434 stran
vyd. Taylor & Francis Ltd, II/2024
ISBN 9781032329437

katalog.cena 4.440 Kč
v této nabídce **3.220 Kč**

The book presents the innovative aspects of smart industries and intelligent technologies involving Robotics and Automation. It discusses the challenges in the design of autonomous robots and provides an understanding of how different systems communicate with each other, allowing cooperation with other human systems and operators in real time. Robotics and Automation in Industry 4.0: Smart Industries and Intelligent Technologies offers research articles, flow charts, algorithms, and examples based on daily life in automation and robotics related to the building of Industry 4.0.

It presents disruptive technology applications related to Smart Industries and talks about how robotics is an important Industry 4.0 technology that offers a wide range of capabilities and has improved automation systems by doing repetitive tasks with more accuracy and at a lower cost. The book discusses how frontline healthcare staff can evaluate, monitor, and treat patients from a safe distance by using robotic and telerobotic systems to minimize the risk of infectious disease transmission. Artificial intelligence (AI) and machine learning (ML) are looked at and the book offers a comprehensive overview of the key challenges surrounding the Internet of Things (IoT) and AI synergy, including current and future applications with significant societal value.

Smart Cities: Power Electronics, Renewable Energy and Internet of Things



v měkké vazbě, 320 stran
vyd. Taylor & Francis Ltd, II/2024
ISBN 9781032669786

katalog.cena 1.330 Kč
v této nabídce **990 Kč**

This book discusses the integration of power electronics, renewable energy, and the Internet of Things (IoT) from the perspective of smart cities in a single volume. The text will be helpful for senior undergraduate, graduate students and academic researchers in diverse engineering fields including electrical, electronics and communication, and computers. The book: Covers the integration of power electronics, energy harvesting, and the IoT for smart city applications Discusses concepts of power electronics and the IoT in electric vehicles for smart cities Examines the integration of power electronics in renewable energy for smart cities Discusses important concepts of energy harvesting including solar energy harvesting, maximum power point tracking (MPPT) controllers, and switch-mode power supplies (SMPS) Explores IoT connectivity technologies such as long-term evolution (LTE), narrow band NB-IoT, long-range (LoRa), Bluetooth, and ZigBee (IEEE Standard 802.15.4) for low data rate wireless personal communication applications The text provides the knowledge about applications, technologies, and standards of power electronics, renewable energy, and IoT for smart cities..

Sustainable Aviation Fuels



v pevné vazbě, 210 stran
vyd. Taylor & Francis Ltd, II/2024
ISBN 9781032576022

katalog.cena 2.660 Kč
v této nabídce **1.980 Kč**

Sustainable Aviation Fuels discusses the transfer process of aviation to carbon-neutral flights, including how to manage the transition period. It also demonstrates how to develop and design a new approach for environmentally friendly air transport with reduced emissions. Covering the full scope of commercialisation, market considerations, advisements on investments and transition challenges of sustainable aviation fuels (SAF), the book tackles questions related to the cost of changing fuel types, competitive market models that can exist parallel to the oil industry and strategies for airlines to implement.

It considers reliability requirements for feedstock suppliers and SAF producers, as well as ways to avoid feedstock shortages. The book will interest aviation industry professionals, fuel producers, airline fuel buyers, airport operators and propulsion engineers working on SAF production. Aviation, aerospace and business students taking courses in propulsion, gas turbine emissions, air transport management, supply chain development and sustainable energy production will find the book useful as well.

Ultrasonics



v pevné vazbě, 876 stran
vyd. Taylor & Francis Ltd, II/2024
ISBN 9780367252816

katalog.cena 5.620 Kč
v této nabídce **4.100 Kč**

Updated, revised, and restructured to reflect the latest advances in science and applications, the fourth edition of this best-selling industry and research reference covers the fundamental physical acoustics of ultrasonics and transducers, with a focus on piezoelectric and magnetostrictive modalities. It then discusses the full breadth of ultrasonics applications involving low power (sensing) and high power (processing) for research, industrial, and medical use. This book includes new content covering computer modeling used for acoustic and elastic wave phenomena, including scattering, mode conversion, transmission through layered media, Rayleigh and Lamb waves and flexural plates, modern horn design tools, Langevin transducers, and material characterization.

There is more attention on process monitoring and advanced nondestructive testing and evaluation (NDT/NDE), including phased array ultrasound (PAUT), long-range inspection, using guided ultrasonic waves (GUW), internally rotary inspection systems (IRIS), time-of-flight diffraction (TOFD), and acoustic emission (AE). These methods are discussed and applied to both metals and nonmetals using illustrations in various industries, including now additionally for food and beverage products. The topics of defect sizing, capabilities, and limitations, including the probability of detection (POD), are introduced.